

## Subject Index

### **Abatement and removal**

Aerated Rock Filters for Enhanced Ammonia and Fecal Coliform Removal from Facultative Pond Effluents, 646

Bioremediation of Hazardous Wastes — A Review, 1946

Development of a Response Surface for Prediction of Nitrate Removal in Sulfur — Limestone Autotrophic Denitrification Fixed-Bed Reactors, 721

Effect of Cd(II) on Different Bacterial Species Present in a Single Sludge Activated Sludge Process for Carbon and Nutrient Removal, 602

Effect of Metallic Iron Concentration on End-Product Distribution during Metallic Iron-Assisted Autotrophic Denitrification, 712

Evaluating Bioretention Hydrology and Nutrient Removal at Three Field Sites in North Carolina, 1232

Evaluation of a Sludge Yield and Phosphorus Removal in a Cannibal Solids Reduction Process, 735

Heavy Metals Removal from Acidic and Saline Soil Leachate using Either Electrochemical Coagulation or Chemical Precipitation, 660

Laboratory-Scale Evaluation of Cr(VI) Removal from Clay by Electrokinetics Incorporated with Fe(O) Barrier, 1959

Microbial Adaptability to Organic Loading Changes in an Enhanced Biological Phosphorus Removal Process, 701

Modeling Substrate Interactions during Aerobic Biodegradation of Mixtures of Vinyl Chloride and Ethene, 705

Removal of Immiscible Contaminants from Sandy Soil Monitored by Means of Dielectric Measurements, 704

Removal of Inorganic Mercury from Polluted Water using Structured Nanoparticles, 621

Removal of Lead from Contaminated Water and Clay Soil using a Biosurfactant, 687

Simultaneous Removal of Carbon and Nitrogen from Swine Wastewater using an Immobilized-Cell Reactor, 630

Simultaneous Removal of Cd and Cr(VI) using Fe-Loaded Zeolite, 632

Simultaneous Removal of Phenol and Nitrate in an Anaerobic Bioreactor, 722

Storm Water Detention Ponds: Modeling Heavy Metal Removal by Plant Species and Sediments, 717

Sulfur Impregnation on Activated Carbon Fibers through H<sub>2</sub>S Oxidation for Vapor Phase Mercury Removal, 615

Vermiculite Filtration for Removal of Oil from Water, 1957

Zero-Valent Iron Reactive Materials for Hazardous Waste and Inorganics Removal, 2097

### **Abrasives**

Total PM Emission Factors for Steel Grit Used in Dry Abrasive Blasting, 768

### **Absorption**

Comparative Absorption of Crude Oil from Fresh and Marine Water using Recycled Rubber, 723

### **Dynamic Anomalies in a Modular Bridge Expansion Joint, 157**

Improving Air-Cooled Condenser Performance in Combined Cycle Power Plants, 429

Performance of Overburnt Distorted Bricks as Aggregates in Pavement Works, 1352

Water Transport in Concrete Damaged by Tensile Loading and Freeze-Thaw Cycling, 1307

### **Abutments**

Countermeasure Toe Protection at Spill-Through Abutments, 956

Scour Countermeasures for Wing-Wall Abutments, 988

### **Acceleration**

Approximate Floor Acceleration Demands in Multistory Buildings. I: Formulation, 6

Collecting Driving Data to Support Mobile Source Emissions Estimation, 1756

Online Earthquake Response Test for Stratified Layers of Clay and Sand, 834

### **Accident prevention**

Owner's Role in Construction Safety, 304

Owner's Role in Construction Safety: Guidance Model, 305

Scheduling-Based Risk Estimation and Safety Planning for Construction Projects, 351

Screening Tools for Considering Grade Separation at Rail-Highway Crossings, 1668

Urban Bicycle Route Safety Rating Model Application in Jersey City, New Jersey, 1716

### **Accidents**

Analysis of Construction Worker Injuries That Do Not Result in Lost Time, 320

Case for Drug Testing of Construction Workers, 1242

Comparative Injury and Fatality Risk Analysis of Building Trades, 342

Human-Assisted Obstacle Avoidance System using 3D Workspace Modeling for Construction Equipment Operation, 262

Organizational Distortions and Failures: A Method to Expose Them, 1408

Owner's Role in Construction Safety, 304

Physical Risk Factors and Controls for Musculoskeletal Disorders in Construction Trades, 393

### **Accounting**

Interactions between Business and Financial Strategies of Large Engineering and Construction Firms, 1254

### **Accreditation**

Engineering Experience and Competitions Implement ABET Criteria, 1419

### **Accuracy**

Accurate Representation of External Force in Time History Analysis, 438

Comparison of Modeling and Measurement Accuracy of Road Condition Data, 1742

Impact of Limiters on Accuracy of High-Resolution Flow and Transport Models, 443

## Acid rain

### Acid rain

Concentration — Duration — Frequency Curves for pH in a Stream in the Great Smoky Mountains, 765

### Acids

Citric Acid Enhanced Remediation of Soils Contaminated with Uranium by Soil Flushing and Soil Washing, 609

Impact of Inherent Factors on the Radiolytic Degradation of Biorefractory Contaminants, 755

### Acoustic detection

Assessment of Localized Damage in Concrete under Compression using Acoustic Emission, 1296

Structural Monitoring and Integrity Assessment of Medieval Towers, 1605

### Acoustic measurement

Acoustic Emission Damage Assessment of Steel/CFRP Bonds for Rehabilitation, 214

Case Study of Precision of GPS Differential Correction Strategies: Influence on aDep Velocity and Discharge Estimates, 955

### Acoustics

Dynamic Anomalies in a Modular Bridge Expansion Joint, 157

Fatigue Behavior and Nondestructive Evaluation of Full-Scale FRP Honeycomb Bridge Specimen, 145

Overture to Omaha, 2024

### Activated carbon

Adsorption and Desorption of Volatile Organic Compounds in Fluidized Bed, 648

Control of PAHs from Incineration by Activated Carbon Fibers, 650

Determination and Correlation of Binary Gas Adsorption Equilibria of VOCs, 616

Evaluation of Water Reuse Technologies for the Textile Industry, 618

Predicting the Performance of Activated Carbon-, Coke-, and Soil-Amended Thin Layer Sediment Caps, 688

Removal of Toluene Vapor with Dispersed Activated Carbon, 622

Sulfur Impregnation on Activated Carbon Fibers through H<sub>2</sub>S Oxidation for Vapor Phase Mercury Removal, 615

### Activated sludge

Activated Sludge Process Modification for Sludge Yield Reduction using Pulp and Paper Wastewater, 715

Comparison of Two Model Concepts for Simulation of Nitrogen Removal at a Full-Scale Biological Nutrient Removal Pilot Plant, 636

Density and Activity Characterization of Activated Sludge Flocs, 724

Effect of Cd(II) on Different Bacterial Species Present in a Single Sludge Activated Sludge Process for Carbon and Nutrient Removal, 602

Effect of Ozone on Filamentous Bulking in a Laboratory Scale Activated Sludge Reactor using Respirometry and INT-Dehydrogenase Activity, 713

Evaluation of a Sludge Yield and Phosphorus Removal in a Cannibal Solids Reduction Process, 735

Simulating Activated Sludge System by Simple-to-Advanced Models, 587

## 2006 ASCE TRANSACTIONS

### Active control

General Approach for Training Back-Propagation Neural Networks in Vibration Control of Multidegree-of-Freedom Structures, 269

Modal Seismic Control of Building Frames by Artificial Neural Network, 252

Time-Delayed Positive Velocity Feedback Control Design for Active Control of Structures, 503

### Adaptive systems

Adaptive Optimization and Systematic Probing of Infrastructure System Maintenance Policies under Model Uncertainty, 1156

### Adhesives

Cold-Formed Steel Frame Shear Walls Utilizing Structural Adhesives, 1497

Effects of FRP-Concrete Interface Bond Properties on the Performance of RC Beams Strengthened in Flexure with Externally Bonded FRP Sheets, 1345

Performance Implications of Imperfectly Plastic Material in Metallic Structures with Nonmetallic Reinforcement, 1461

Performance in Fire of Small-Scale CFRP Strengthened Concrete Beams, 239

Selection of Carbon-Fiber-Reinforced Polymer Systems for Steelwork Upgrading, 1335

### Admixtures

Effect of Mixture Consistency on Formwork Pressure Exerted by Highly Flowable Concrete, 1353

Fundamental Characteristics of Cement-Admixed Clay in Deep Mixing, 1279

### Adsorption

Adsorption and Desorption of Volatile Organic Compounds in Fluidized Bed, 648

Applicability of Equilibrium Isotherm Models for the Biosorptive Uptakes in Comparison to Activated Carbon-Based Adsorption, 764

Comparison of Methods for Determining Specific Surface Area of Soils, 865

Control of PAHs from Incineration by Activated Carbon Fibers, 650

Determination and Correlation of Binary Gas Adsorption Equilibria of VOCs, 616

Measured and Predicted Herbicide Removal by Mulch, 702

Predicting the Performance of Activated Carbon-, Coke-, and Soil-Amended Thin Layer Sediment Caps, 688

Selective Removal of Heavy Metals from Industrial Wastewater using Maghemite Nanoparticle: Performance and Mechanisms, 679

Simulation of Lead Ions Adsorption onto the Iron-Coated Medium: Dependent on Temperature and pH, 1942

Wastewater Treatment with Biomass Attached to Porous Geotextile Baffles, 614

### Advection

Comparison of SF<sub>6</sub> and Fluorescein as Tracers for Measuring Transport Processes in a Large Tidal River, 774

Steady-State Diffusion — Advection by Exponential Finite Elements, 55

### Aeration

Aerated Rock Filters for Enhanced Ammonia and Fecal Coliform Removal from Facultative Pond Effluents, 646

## SUBJECT INDEX

- Bottom Aeration of Stepped Spillways, 1014  
Iron-Mediated Aeration: Evaluation of Energy-Assisted Enhancement for In Situ Subsurface Remediation, 683
- Aerial photography**  
Improved AADT Estimation by Combining Information in Image- and Ground-Based Traffic Data, 1719
- Aerial surveys**  
Single Epoch Kinematic GPS Positioning Technique in Short Baseline, 1647
- Aerobic treatment**  
Formation of Aerobic Granules with Domestic Sewage, 677  
Potential of a Combination of UASB and DHS Reactor as a Novel Sewage Treatment System for Developing Countries: Long-Term Evaluation, 601  
Simulating Activated Sludge System by Simple-to-Advanced Models, 587  
Treatment of High-Strength Pharmaceutical Wastewater and Removal of Antibiotics in Anaerobic and Aerobic Biological Treatment Processes, 597
- Aerodynamics**  
Analysis of Long Span Bridge Response to Winds: Building Nexus between Flutter and Buffeting, 1637  
Computational Fluid Dynamics Simulation of Concentration Distributions from a Point Source in the Urban Street Canyons, 67  
Database-Assisted Design of Low-Rise Buildings: Aerodynamic Considerations for a Practical Interpolation Scheme, 1529  
History and Aesthetics of the Bronx-Whitestone Bridge, 127  
Modeling Response of Flexible High-Aspect-Ratio Wings to Wind Turbulence, 70  
Revisiting Multimode Coupled Bridge Flutter: Some New Insights, 551
- Aeroelasticity**  
Analysis of Long Span Bridge Response to Winds: Building Nexus between Flutter and Buffeting, 1637  
Flutter Phenomenon in Aeroelasticity and its Mathematical Analysis, 58  
Full-Scale Measurements to Investigate Rain — Wind Induced Cable-Stay Vibration and its Mitigation, 133  
Nonlinear Aeroelasticity: Continuum Theory, Flutter/Divergence Speed, and Plate Wing Model, 76  
Revisiting Multimode Coupled Bridge Flutter: Some New Insights, 551
- Aerospace engineering**  
Calibration of Strapdown Magnetometers in Magnetic Field Domain, 68  
Continuum Modeling of an Innovative Space-Based Radar Antenna Truss, 79
- Africa**  
Transportation System Sustainability Issues in High-, Middle-, and Low-Income Economies: Case Studies from Georgia (U.S.), South Korea, Colombia, and Ghana, 1793
- Aggregates**  
Analysis of Flexible Pavement Response and Performance using Isotropic and Anisotropic Material Properties, 1698  
Application of Weibull Statistics to the Tensile Strength of Rock Aggregates, 850
- Agriculture**  
Automated Measurement of Railway Ballast Angularity, 1331  
Bitumen Surface Energy Characterization Using a Contact Angle Approach, 1350  
Correlation of Aggregate Test Parameters to Hot Mix Asphalt Pavement Performance in Hawaii, 1672  
Density and Activity Characterization of Activated Sludge Flocs, 724  
Design and Performance of Stone Mastic Asphalt, 1768  
Effect of Coarse Aggregate Morphology on Permanent Deformation Behavior of Hot Mix Asphalt, 1726  
Experimental Investigation on Torsional Behavior of Solid and Box-Section RC Beams Strengthened with CFRP using Photogrammetry, 221  
Impact of Particle Aggregated Microbes on UV Disinfection. I: Evaluation of Spore — Clay Aggregates and Suspended Spores, 666  
Influence of Water on Alkali-Silica Reaction: Experimental Study and Numerical Simulations, 1323  
Load Transfer in Rammed Aggregate Piers, 51  
Performance of Overburnt Distorted Bricks as Aggregates in Pavement Works, 1352  
Strength of Lightweight Glass Aggregate Concrete, 1343  
Thermochemical Analysis in the Presintering Phase of Aggregates from Sludge-Marine Clay Mixes, 1267  
Using Crushed Clay Brick as Coarse Aggregate in Concrete, 1319
- Aging**  
Accounting for Soil Aging When Assessing Liquefaction Potential, 811
- Durability Prediction for GFRP Reinforcing Bars using Short-Term Data of Accelerated Aging Tests, 216
- Effect of Early-Age Temperature Rise on the Stability of Rapid-Hardening Cement Fiber Composites, 1325
- Environmental Effects on Epoxy Adhesives Employed for Restoration of Historical Buildings, 1344
- Estimation of RAP's Binder Viscosity using GPC without Binder Recovery, 1324
- Modifying Merchants Bridge, 2022
- Past Perfect, 1996
- Simplified Numerical Method to Evaluate the Mechanical Strength of Cast Iron Water Pipes, 1143
- Agreements**  
Impact of Politics on the Colorado River Basin Water Agreement: In-Depth Administrative Analysis, 1911
- Agricultural wastes**  
Economic Analysis of an Irrigation System for Liquid Manure Application, 1208
- Agriculture**  
Economically Driven Simulation of Regional Water Systems: Friant-Kern, California, 1849  
Effect of Forecast-Based Pricing on Irrigated Agriculture: A Simulation, 1843  
Enhanced Runoff Curve Number Model Incorporating Storm Duration and a Nonlinear  $I_a \cdot S$  Relation, 1136  
Performance-Based Optimization of Land and Water Resources within Irrigation Schemes. I: Method, 1201  
Performance-Based Optimization of Land and Water Resources within Irrigation Schemes. II: Application, 1202

## Agriculture

Soil Stabilization in Semiarid and Arid Land Agriculture, 1282

### Air entrainment

Experimental Study of Flow in a Vortex Drop Shaft, 937

Response of Air-Entrained Concrete to Severe Chemical Aggression, 1262

### Air flow

Dynamics of Air Flow in Sewer Conduit Headspace, 1009

Effect of Pressure Fluctuations on the Quality of Fluidization and on the Generation of Particulate Matters during Incineration, 708

Modeling Ventilation Phenomenon in Sanitary Sewer Systems: A System Theoretic Approach, 1008

Nonlinear Aeroelasticity: Continuum Theory, Flutter/Divergence Speed, and Plate Wing Model, 76

### Air pollution

Analytical Study of Turbulent Pollutant Dispersion near a Low Hill, 444

Assessment of the Impact of Improvement Measures on Air Quality: Case Study of Delhi, 1714

Collecting Driving Data to Support Mobile Source Emissions Estimation, 1756

Computational Fluid Dynamics Simulation of Concentration Distributions from a Point Source in the Urban Street Canyons, 67

Determination and Correlation of Binary Gas Adsorption Equilibria of VOCs, 616

Highway Route Optimization Based on Accessibility, Proximity, and Land-Use Changes, 1708

Life-Cycle Assessment of Office Buildings in Europe and the United States, 1138

Particulate Matter from Stone Crushing Industry: Size Distribution and Health Effects, 628

Simplified Methodology to Estimate Emissions from Mobile Sources for Ambient Air Quality Assessment, 1753

Total PM Emission Factors for Steel Grit Used in Dry Abrasive Blasting, 768

Transportation Choices and Air Pollution Effects of Telework, 1149

Vapor Leak Detection for an Underground Storage Tank System, 703

### Air quality

Simplified Methodology to Estimate Emissions from Mobile Sources for Ambient Air Quality Assessment, 1753

### Air temperature

Modeling of Lake Ice Characteristics in North America using Climate, Geography, and Lake Bathymetry, 187

Simplified Methodology to Estimate Emissions from Mobile Sources for Ambient Air Quality Assessment, 1753

### Air water interactions

Air/Water Oxygen Transfer in a Biological Aerated Filter, 603

Hydraulics of Plane Plunge Pool Scour, 976

### Aircraft

Modeling Response of Flexible High-Aspect-Ratio Wings to Wind Turbulence, 70

## 2006 ASCE TRANSACTIONS

### Airfields

Airfield and Highway Pavement: Meeting Today's Challenges with Emerging Technologies, 2047

### Airport construction

Optimizing Airport Construction Site Layouts to Minimize Wildlife Hazards, 1257

### Airport runways

Airfield and Highway Pavement: Meeting Today's Challenges with Emerging Technologies, 2047

Assessing Damage to Airport Pavement Structure due to Complex Gear Loads, 1761

Defeating Delays, 2028

Effect of Slab-Base Interaction on Measured Concrete Pavement Responses, 1707

Investigation of Heaving at Holloman Air Force Base, New Mexico, 1370

### Airport terminals

Automated Access, 2036

### Airports

Minimizing Construction-Related Hazards in Airport Expansion Projects, 344

### Alabama

Development of a Methodology to Predict Through-Trip Rates for Small Communities, 1784

### Alaska

Disinfection By-Product Formation during Long-Term Water Storage in Alaska, 188

### Algorithms

Algorithm Fusion for Detecting Incidents on Singapore's Central Expressway, 1696

Alternative Decision Making in Water Distribution Network with NSGA-II, 1813

Assessing Performance under Regulatory Evolution: A European Transit System Perspective, 1798

Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Theory, 1186

Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Simulation Results, 1187

Calibration of Strapdown Magnetometers in Magnetic Field Domain, 68

Damage Identification Based on Dead Load Redistribution: Methodology, 1562

Developing Combined Genetic Algorithm—Hill-Climbing Optimization Method for Area Traffic Control, 1736

Development of an Optimization Methodology for Adaptive Traffic Sign Control at Diamond Interchanges, 1732

Economic Heuristic Optimization for Heterogeneous Fleet VRPHESTW, 1694

Evaluation of Speed-Based Travel Time Estimation Models, 1721

Free Transverse and Lateral Vibration of Beams with Torsional Coupling, 59

Genetic Algorithm Based Construction-Conscious Minimum Weight Design of Seismic Steel Moment-Resisting Frames, 1444

Hybrid Data Mining/Genetic Shredding Algorithm for Reliability Assessment of Structural Systems, 1582

Identification of Groundwater Pollution Sources using GA-Based Linked Simulation Optimization Model, 1081

## SUBJECT INDEX

- Identifying a Design Management Package to Support Concurrent Design in Building Wafer Fabrication Facilities, 348
- Improved Design for Vision-Based Incident Detection in Transportation Systems using Real-Time View Transformations, 1755
- Integrated Optimization of Control System for Smart Cylindrical Shells using Modified GA, 66
- Multibjective Plan Selection Optimization for Traffic Responsive Control, 1702
- Multiple Optimum Size/Shape/Topology Designs for Skeletal Structures using a Genetic Algorithm, 1552
- Non-Unit-Based Planning and Scheduling of Repetitive Construction Projects, 346
- Operational Integration of Suburban Railway and Public Buses — Case Study of Mumbai, 1718
- Operational Response Model for Physically Attacked Water Networks using NSGA-II, 283
- Optimal Design of Redundant Water Distribution Networks using a Cluster of Workstations, 1840
- Optimal Design with Probabilistic Objective and Constraints, 445
- Optimal Reservoir Operation for Irrigation of Multiple Crops using Genetic Algorithms, 1178
- Optimal Reservoir Operations for Irrigation using a Three Spatial Scales Approach, 1179
- Optimal Transit Route Network Design Problem with Variable Transit Demand: Genetic Algorithm Approach, 1667
- Parallel Genetic Algorithms for Optimizing Resource Utilization in Large-Scale Construction Projects, 337
- Parameter Estimation for the Nonlinear Muskingum Model using the BFGS Technique, 1217
- Prediction of Concrete Strength using Neural-Expert System, 1311
- Role of Learning Algorithm in Neural Network-Based Backcalculation of Flexible Pavements, 287
- Scheduling Construction Projects using Evolutionary Algorithm, 374
- Simulated Annealing — Genetic Algorithm for Transit Network Optimization, 251
- Structural Damage Detection via Modal Data with Genetic Algorithms, 1586
- Time-Step Dependency of Infiltration Errors in the HSPF Model, 1102
- Unstructured Grid Finite-Volume Algorithm for Shallow-Water Flow and Scalar Transport with Wetting and Drying, 968
- Use of Artificial Neural Networks in the Prediction of Liquefaction Resistance of Sands, 917
- Using a Simulated Annealing Algorithm to Solve the Transit Route Network Design Problem, 1676
- Alignment**
- Addressing Security in Early Stages of Project Life Cycle, 1259
- Highway Route Optimization Based on Accessibility, Proximity, and Land-Use Changes, 1708
- Model for Three-Dimensional Highway Alignment, 1764
- Modeling Driver Visual Demand on Three-Dimensional Highway Alignments, 1700
- Alkalinity**
- Initial Alkalinity Requirement and Effect of Alkalinity Sources in Sulfur-Based Autotrophic Denitrification Barrier System, 709
- Anaerobic treatment**
- Remediation of RDX-Contaminated Water using Alkaline Hydrolysis, 610
- Allocations**
- Optimal Irrigation Planning under Water Scarcity, 1189
- Alluvial channels**
- Downstream Hydraulic Geometry of Alluvial Channels, 1067
- Scale Independent Linear Behavior of Alluvial Channel Flow, 1002
- Alluvial streams**
- Breaking Antidunes: Cyclic Behavior due to Hysteresis, 993
- Alluvial valleys**
- Evaluating Regional Solutions to Salinization and Waterlogging in an Irrigated River Valley, 1166
- Aluminum**
- Experimental Investigation of Aluminum Alloy Thin-Walled Tubular Members in Combined Compression and Bending, 1632
- Fatigue Behavior of Welded Aluminum Light Pole Support Details, 1628
- Modeling the Sorption of Fluoride onto Alumina, 608
- Oxidative and Reductive Degradation of Mixed Contaminants by Bisfunctional Aluminum, 1944
- Residual Stress Measurement of Welded Aluminum Light Pole Supports, 1597
- Tests and Design of Aluminum Alloy Compression Members, 1546
- Ammonia**
- Aerated Rock Filters for Enhanced Ammonia and Fecal Coliform Removal from Facultative Pond Effluents, 646
- Nutrient Removal in a Cold-Region Wastewater Stabilization Pond: Importance of Ammonia Volatilization, 633
- Amplification**
- Effect of Vehicle Velocity on the Dynamic Amplification of a Vehicle Crossing a Simply Supported Bridge, 128
- Effect of Vehicle Velocity on the Dynamic Amplification of Two Vehicles Crossing a Simply Supported Bridge, 129
- Frequency-Dependent Amplification of Unsaturated Surface Soil Layer, 827
- Anaerobic treatment**
- Anaerobic Biodegradation of RDX and TCE: Single- and Dual-Contaminant Batch Tests, 1949
- Anaerobic Degradability: Effect of Particulate COD, 637
- Anaerobic Filter Treatment of Municipal Wastewater: Biosolids Behavior, 585
- Enhancement of Anaerobic Digestion of Excess Municipal Sludge with Thermal and/or Oxidative Treatment, 670
- Fate and Modeling of Pentachlorophenol Degradation in a Laboratory-Scale Anaerobic Sludge Digester, 689
- Potential of a Combination of UASB and DHS Reactor as a Novel Sewage Treatment System for Developing Countries: Long-Term Evaluation, 601
- Simultaneous Removal of Phenol and Nitrate in an Anaerobic Bioreactor, 722

## Analytical techniques

### Analytical techniques

- Analytical Solutions of Nonlinear Kinematic Wave Model, 1126
- Buckling of Simply Supported Rectangular Reissner—Mindlin Plates Subjected to Linearly Varying In-Plane Loading, 491
- Efficient Solution of the Coupled One-Dimensional Surface — Two-Dimensional Subsurface Flow during Furrow Irrigation Advance, 1206
- Exact Solution of Out-of-Plane Problems of an Arch with Varying Curvature and Cross Section, 494
- Explicit Expression for Beach Response to Non-Stationary Forcing near a Groyne, 1867
- Improved Analysis Method for Wave-Induced Pipeline Stability on Sandy Seabed, 1727
- Response Amplitude and Hydrodynamic Force for a Buoy over a Convex, 1864
- Scattering of Linear Water Waves by a Fixed and Infinitely Long Rectangular Structure Parallel to a Vertical Wall in Oblique Seas, 1865
- Seepage to a Drainage Ditch and Optimization of Its Shape, 1234
- Three-Parameter Model for Debonding of FRP Plate from Concrete Substrate, 485
- Undrained Bearing Capacity of Square and Rectangular Footings, 27
- ### Anchorage
- Design and Evaluation of Fiber-Reinforced Polymer Bond-Type Anchorages and Ground Anchors, 29
- Posttensioned Anchorage Zone Enhancement with Fiber-Reinforced Concrete, 159
- ### Anchors
- Design and Evaluation of Fiber-Reinforced Polymer Bond-Type Anchorages and Ground Anchors, 29
- Effect of Sleeve Material on Interfacial Contact Behavior of CFRP-Metal Couples, 1358
- ### Anemometers
- Evaluation of Mixing Energy in Laboratory Flasks used for Dispersant Effectiveness Testing, 593
- ### Angle sections
- Design of Slender Angle Section Beam-Columns by the Direct Strength Method, 1458
- ### Animals
- Economic Analysis of an Irrigation System for Liquid Manure Application, 1208
- ### Anisotropic materials
- Analysis of Finite Strain Anisotropic Elastoplastic Fracture in Thin Plates and Shells, 81
- Moisture Effects on Elastic and Viscoelastic Properties of CFRP Rebars and VinylEster Binder, 1340
- ### Anisotropy
- Analysis of Flexible Pavement Response and Performance using Isotropic and Anisotropic Material Properties, 1698
- Anisotropic Nonlinear Elastic Model for Particulate Materials, 874
- Automatically Computing the Displacements and Stresses Induced by Three-Dimensional Arbitrarily Shaped Loads in a Transversely Isotropic Medium, 18
- Chemomechanical Assessment of Beams Damaged by Alkali-Silica Reaction, 1317

## 2006 ASCE TRANSACTIONS

- Displacements and Stresses Due to a Uniform Vertical Circular Load in an Inhomogeneous Cross-Anisotropic Half-Space, 12
- Distortional Buckling of Cold-Formed Stainless Steel Sections: Experimental Investigation, 1488
- Distortional Buckling of Cold-Formed Stainless Steel Sections: Finite-Element Modeling and Design, 1489
- Identification and Interpretation of Microplane Material Laws, 465
- Modeling of Pavement Response using Nonlinear Cross-Anisotropy Approach, 1711
- Multilaminate Macromodel for Concrete Masonry: Formulation and Verification, 1635
- Porochemoclastic Solution for an Inclined Borehole in a Transversely Isotropic Formation, 510
- Principal Deviatoric Strain Increment Ratios for Sand having Inherent Transverse Isotropy, 47
- Single Hardening Elasto-Plastic Model for Kaolin Clay with Loading-History-Dependent Plastic Potential Function, 17
- ### Approximation methods
- Analytical Solution of the Burgers Equation for Simulating Translatory Waves in Conveyance Channels, 951
- Approximate Analysis of Bridges for the Routing and Permitting Procedures of Overweight Vehicles, 132
- Approximate Floor Acceleration Demands in Multistoried Buildings. I: Formulation, 6
- Compilation of a Map of Recent Vertical Crustal Movements in Eastern Canada using Geographic Information System, 1663
- Generalized Interstory Drift Spectrum, 1523
- ### Aprons
- Scour Downstream of an Apron Due to Submerged Horizontal Jets, 957
- ### Aquatic habitats
- Phoenix Rises, 1999
- ### Aquatic plants
- Lodging Velocity for an Emergent Aquatic Plant in Open Channels, 1032
- ### Aquifers
- Analyses of Drought Flow in Recession Period, 1085
- Aquifer Diffusivity Estimation from Response to Stream Stage Variation, 1100
- Biologically Mediated Reductive Transformation of Ordnance-Related Compounds by Mixed Aquifer Culture using Acetate as the Sole Carbon Source: Laboratory Treatability Studies for Field Demonstration, 1948
- Character of Organic Matter in Soil-Aquifer Treatment Systems, 748
- Column Study Simulating In Situ Bioremediation of Perchlorate using Acetate as an Organic Substrate, 1950
- Derived Operating Rules for Allocating Recharges and Withdrawals among Unconnected Aquifers, 1803
- EDTA, NTA, Alkylphenol Ethoxylate and DOC Attenuation during Soil Aquifer Treatment, 674
- Enhancement of Remediation of NAPL Contaminated Fractured Permeable Formations — Modeling Study, 589
- Flow Depletion of Semipervious Streams Due to Unsteady Pumping Discharge, 1209
- Modeling the Sorption of Fluoride onto Alumina, 608

## SUBJECT INDEX

- Numerical Model of Saltwater Transport toward a Pumping Well, 1103
- Simplified Kernel Method for Flow to Large Diameter Wells, 1173
- Water Reuse/Recycling and Reclamation in Semiarid Zones: The Israeli Case of Salination and "Hard" Surfactants Pollution of Aquifers<sup>1</sup>, 675
- Arbitration**
- Logistic Likelihood Analysis of Mediation Outcomes, 389
- Utilizing Dispute Review Boards in Relational Contracting: A Case Study, 1436
- Arches**
- Creep Buckling of Shallow Parabolic Concrete Arches, 1601
- Exact Solution of Out-of-Plane Problems of an Arch with Varying Curvature and Cross Section, 494
- Renovation of the 17th-Century Ponte Lungo Bridge in Chioggia, Italy, 105
- Architect/engineers**
- Design Errors: Inefficiency or Carelessness of Designer?, 1383
- Evolution of Bricks and Brick Masonry in the Early History of its Use in the Region of Today's Serbia, 1341
- Architecture**
- Building Integration Solutions, 2053
- Computer Representation to Support Conceptual Structural Design within a Building Architectural Context, 253
- Decline of the Engineering Class: Effects of Global Outsourcing of Engineering Services, 1910
- A Healing Place, 1998
- Argentina**
- Resistivity Survey of the Subsurface Conditions in the Estuary of the Río de la Plata, 784
- Arid lands**
- Estimating Infiltration in the Upper Split Wash Watershed, Yucca Mountain, NV, 1083
- Evaluation of Dust Palliatives for Unpaved Roads in Arid Climates, 1394
- Soil Stabilization in Semiarid and Arid Land Agriculture, 1282
- Water Reuse/Recycling and Reclamation in Semiarid Zones: The Israeli Case of Salination and "Hard" Surfactants Pollution of Aquifers<sup>1</sup>, 675
- Arizona**
- EDTA, NTA, Alkylphenol Ethoxylate and DOC Attenuation during Soil Aquifer Treatment, 674
- Impact of Politics on the Colorado River Basin Water Agreement: In-Depth Administrative Analysis, 1911
- Phoenix Rises, 1999
- Remarkable Rotation, 1994
- Salt River Project Canal Automation Pilot Project: Simulation Tests, 1180
- Value of Instream Recreation in the Sonoran Desert, 1806
- Aromatic hydrocarbons**
- Biodegradability of Surfactants under Aerobic, Anoxic, and Anaerobic Conditions, 613
- Emission of Polycyclic Aromatic Hydrocarbons on the Combustion of Liquid Crystal Display Components, 716
- Arsenic**
- Arsenic Removal from Water by Moving Bed Active Filtration, 583
- Factors Influencing Arsenite Removal by Zero-Valent Iron, 749
- Iron Oxide Coated Sand for Arsenic Removal: Investigation of Coating Parameters using Factorial Design Approach, 1962
- Precipitative Removal of As, Ba, B, Cr, Sr, and V using Sodium Carbonate, 653
- Artificial intelligence**
- Application of Support Vector Machine in Lake Water Level Prediction, 1091
- Classifying Construction Contractors Using Unsupervised-Learning Neural Networks, 411
- Experimental Verification of Smart Cable Damping, 462
- Multi-Agent Framework for General-Purpose Situational Simulations in the Construction Management Domain, 261
- Prediction of Concrete Strength using Neural-Expert System, 1311
- Prediction of Soil Composition from CPT Data using General Regression Neural Network, 272
- Reliable Real-Time Framework for Short-Term Freeway Travel Time Prediction, 1765
- Artificial islands**
- Liquefaction, Cyclic Mobility, and Failure of Silt, 845
- ASCE Publications**
- Peak Wind Load Comparison: Theoretical Estimates and ASCE 7, 1551
- Transactions of the American Society of Civil Engineers 2005, 2094
- Ashes**
- Effects of Silica Fume and Rice Husk Ash on the Properties of Heavyweight Concrete, 1301
- Potential of Wood Waste Ash as an Additive in Concrete, 1330
- Asia**
- Survey of Sustainable Building Design Practices in North America, Europe, and Asia, 88
- Valuing Fisheries and Wetlands using Integrated Economic-Hydrologic Modeling — Mekong River Basin, 1850
- Asphalt cement**
- Commercial Odor-Reducing Agents for Minimizing the Odor Potential of Asphalt Binders, 645
- Asphalt concrete**
- Design and Performance of Stone Mastic Asphalt, 1768
- Evaluation of Viscosity Values for Mixing and Compaction Temperatures, 1322
- Impact of Specimen Geometry on Dynamic Modulus Measurement Test Setup, 1314
- Impact of Temperature Gradient on Modulus of Asphaltic Concrete Layers, 1316
- Influence of Temperature and Pressure on the Dynamic Properties of Rubber-Modified Asphalt Concrete, 1275
- Properties of Asphalt Concrete Layer Interfaces, 1312
- Rate-Type Model for Bituminous Mixtures and Its Application to Sand Asphalt, 497

## Asphalt concrete

## Asphalt concrete

- Simulation of Crack Propagation in Asphalt Concrete using an Intrinsic Cohesive Zone Model, 563  
Thermomechanical Framework for the Constitutive Modeling of Asphalt Concrete, 15
- Asphalt mixes**
- Assessing Permanent Deformation Resistance of High Modulus Asphalt Mixtures, 1704  
Design and Performance of Stone Mastic Asphalt, 1768  
Development of Mix Design Procedure for Cold In-Place Recycling with Foamed Asphalt, 1274  
Effect of Coarse Aggregate Morphology on Permanent Deformation Behavior of Hot Mix Asphalt, 1726  
Evaluation of Foamed Asphalt Cold In-Place Pavement Recycling Using Nondestructive Techniques, 1770  
Evaluation of Viscosity Values for Mixing and Compaction Temperatures, 1322  
Finite-Element Analysis of Hot Mix Asphalt Microstructure using Effective Local Material Properties and Strain Gradient Elasticity, 451  
Reclaimed Asphalt Pavement Detection and Quantity Determination, 1988  
Viscoelastic Modeling and Field Validation of Flexible Pavements, 452
- Asphalt pavements**
- Accuracy of Ground-Penetrating Radar for Pavement Layer Thickness Analysis, 1673  
Application of Graded Finite Elements for Asphalt Pavements, 459  
Asphalt Mix Design and Construction: Past, Present, and Future, 2050  
Assessing Permanent Deformation Resistance of High Modulus Asphalt Mixtures, 1704  
Construction Management of a Small-Scale Accelerated Pavement Testing Facility, 1388  
Development of Mix Design Procedure for Cold In-Place Recycling with Foamed Asphalt, 1274  
Evaluation of Viscosity Values for Mixing and Compaction Temperatures, 1322  
Fast-Track Urban Freeway Rehabilitation with 55-H Weekend Closures: I-710 Long Beach Case Study, 334  
Fatigue and Healing of Asphalt Mixtures: Discriminate Analysis of Fatigue Curves, 1680  
Properties of Asphalt Concrete Layer Interfaces, 1312  
Reclaimed Asphalt Pavement Detection and Quantity Determination, 1988  
Repeated Measurement Data Analysis in Pavement Deterioration Modeling, 1153  
Simple Model for Structural Evaluation of Asphalt Concrete Pavements at the Network Level, 1141  
Use of an Infrared Joint Heater to Improve Longitudinal Joint Performance in Hot Mix Asphalt Pavements, 1380  
Use of Superpave Gyroratory Compaction Data for Rutting Prediction, 1744  
UTW Behavior on Asphalt Pavements Tested with HWLS, 1760
- Asphalts**
- Estimation of RAP's Binder Viscosity using GPC without Binder Recovery, 1324  
Material-Related Aspects of Asphalt Recycling — State-of-the-Art, 1270  
Rheological Characterization of Asphalt Emulsions Residues, 1304

## 2006 ASCE TRANSACTIONS

### Assessments

- Addressing Security in Early Stages of Project Life Cycle, 1259

Assessment of Bridge Remaining Fatigue Life through Field Strain Measurement, 177

Assessment of Dynamic Measurement Accuracy of GPS in Three Directions, 1656

Classroom Assessment and Redesign of an Undergraduate Steel Design Course: A Case Study, 1433

Condition Assessment of Water Distribution Pipes, 1151

Engineering Experience and Competitions Implement ABET Criteria, 1419

Methodology for Ranking the Elements of Water-Supply Networks, 1160

Nondestructive Assessment of Reinforced Concrete Structures Based on Fractal Damage Characteristic Factors, 531

Organizational Distortions and Failures: A Method to Expose Them, 1408

Overview of Vibrational Structural Health Monitoring with Representative Case Studies, 174

Probabilistic Model for the Assessment of Historic Buildings under Permanent Loading, 1361

Stiffness Assessment through Modal Analysis of an RC Slab Bridge before and after Strengthening, 162

### Assets

Markov-Based Optimization Model for Building Facilities Management, 407

### Asymmetry

Asymmetric Flow in Symmetric Supercritical Expansions, 953

Optimal Nonlocal and Asymmetric Structural Damping using Regenerative Force Actuation Networks, 532

Spatial and Temporal Characteristics of Transient Extreme Wave Profiles on Depth-Varying Currents, 541

### Attenuation

Multyear Temporal Changes in Chlorinated Solvent Concentrations at 23 Monitored Natural Attenuation Sites, 672

Remediation of a TCE Plume using a Three-Component Strategy, 1952

### Atterberg limits

Predictive Model for the Water Retention Curve of Deformable Clayey Soils, 881

### Australia

Alliancing in Australia — No-Litigation Contracts: A Tautology?, 1414

Analyzing the Impacts of Microscale Urban Attributes on Travel: Evidence from Suburban Adelaide, Australia, 1787

Discriminating Modes of Shoreline Response to Offshore-Detached Structures, 1873

Dynamic Anomalies in a Modular Bridge Expansion Joint, 157

### Automatic identification systems

Electronic Nose — Membrane Interface Probe for Geoenvironmental Site Characterization, 882

### Automation

Automated Access, 2036

SUB

Auto

Sig

Am

Auto

21

Auto

of

11

Con

Inte

Eco

Mod

B

Resi

es

40

Salt

S

Axi

Ass

C

Cor

M

I

Axi

Bel

O

De

Dra

Est

Ex

Int

Ma

Ro

Re

St

## SUBJECT INDEX

- Automated Estimation of Average Stopped Delay at Signalized Intersections using Digitized Still-Image Analysis of Actual Traffic Flow, 258
- Automated People Mover Standards — Part 1 (ASCE 21-05), 2051
- Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Theory, 1186
- Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Simulation Results, 1187
- Construction Business Automation System, 296
- Interpretation of Automatically Monitored Lifting Equipment Data for Project Control, 256
- Model for Automated Monitoring of Fall Hazards in Building Construction, 360
- Residential Construction Lot Grading Approval Process Optimization: Case Study of City of Edmonton, 409
- Salt River Project Canal Automation Pilot Project: Simulation Tests, 1180
- Axial compression**
- Assessment of Localized Damage in Concrete under Compression using Acoustic Emission, 1296
- Compressive Behavior of Nonslender Cylindrical Steel Members with Small and Large-Scale Geometric Imperfections, 1560
- Axial loads**
- Behavior of Axially Loaded Pile Groups Driven in Clayey Silt, 814
- Design of Circular Base Plates, 1970
- Drag Force on Single Piles in Clay Subjected to Surcharge Loading, 20
- Estimating Seismic Demands for Isolation Bearings with Building Overturning Effects, 1548
- Experimental In-Plane Shear Strength Investigation of Reinforced Concrete Masonry Walls, 1478
- Interaction Diagram and Load Effects for Vertical Pile Groups with Application to the AASHTO LRFD, 1484
- Modeling of Prestressed Concrete-Filled Circular Composite Tubes Subjected to Bending and Axial Loads, 1483
- Residual Performance of FRP-Retrofitted RC Columns after being Subjected to Cyclic Loading Damage, 219
- Static Strength of Cracked Square Hollow Section T Joints under Axial Loads. I: Experimental, 1475
- Static Strength of Cracked Square Hollow Section T Joints under Axial Loads. II: Numerical, 1476
- Axismetry**
- Dynamic Uplift Scenarios for Floating Ice, 182
- Plane Strain and Axially Symmetric Consolidation in Unsaturated Soils, 24
- Azimuth**
- Evaluation of a GPS-Based Approach for Rapid and Precise Determination of Geodetic/Astronomical Azimuth, 1661
- Backfills**
- Active Thrust Due to Backfill Subject to Lines of Surcharge, 805
- Development and Production of Ready-Mixed Soil Material, 1354
- Membrane Behavior of Two Backfills from Field-Constructed Soil-Bentonite Cutoff Walls, 892
- Barriers**
- Slug Test Analysis in Vertical Cutoff Walls. I: Analysis Methods, 817
- Slug Test Analysis in Vertical Cutoff Walls. II: Applications, 818
- Bacteria**
- Aerated Rock Filters for Enhanced Ammonia and Fecal Coliform Removal from Facultative Pond Effluents, 646
- Attachment of Fecal Indicator Bacteria to Particles in the Neuse River Estuary, N.C., 736
- Bioreduction of Hexavalent Chromium in Flow Through Quartz Sand Columns, 623
- Baffles**
- Wastewater Treatment with Biomass Attached to Porous Geotextile Baffles, 614
- Ballast**
- Automated Measurement of Railway Ballast Angularity, 1331
- Bank erosion**
- Impact of Tunnel Reconstruction on Stream Water Quality in Great Smoky Mountains Natl. Park, 1129
- Sediment Transport Model for Seepage Erosion of Stream Bank Sediment, 1133
- Bank stabilization**
- Sediment Transport Model for Seepage Erosion of Stream Bank Sediment, 1133
- Barges**
- Glancing-Blow Impact Forces by a Barge Train on a Lock Approach Wall, 1150
- Barriers**
- Analysis of Deep Moisture Barriers in Expansive Soils. I: Constitutive Model Formulation, 43
- Analysis of Deep Moisture Barriers in Expansive Soils. II: Water Flow Formulation and Implementation, 44
- Behavior of an Air Curtain Subjected to Transversal Pressure Variations, 611
- Confirmation of Aqueous Polymer Sorption on Contaminant Barrier Clay using TGA, 1293
- EOF Analysis of Complex Response of Venice Mobile Gates, 1872
- Field Monitoring of a Permeable Reactive Barrier for Removal of Chlorinated Organics, 605
- Finite-Element Crash Test Simulation of New York Portable Concrete Barrier with I-Shaped Connector, 1481
- High-Density Polyethylene Membrane Containing Fe<sup>0</sup> as a Contaminant Barrier, 690
- Initial Alkalinity Requirement and Effect of Alkalinity Sources in Sulfur-Based Autotrophic Denitrification Barrier System, 709
- Membrane Behavior of Two Backfills from Field-Constructed Soil-Bentonite Cutoff Walls, 892
- Methodology to Develop Median Barrier Warrant Criteria, 1691
- Model Study of the Influence of Submerged Tidal Barriers on Estuarine Mixing and Exchange Processes, 1034
- Natural Gradient Tracer Test for a Permeable Reactive Barrier in Denmark. I: Field Study of Tracer Movement, 1966
- Natural Gradient Tracer Test for a Permeable Reactive Barrier in Denmark. II: Spatial Moments Analysis and Dispersion of Conservative Tracer, 1967

## Barriers

- Porosity Fluctuations in Desiccating Samples of Grout-Stabilized Soil, 1289  
Security Barrier Design, 1981  
**Bars**  
Bond of GFRP Bars in Concrete: Experimental Study and Analytical Interpretation, 227  
Durability Prediction for GFRP Reinforcing Bars using Short-Term Data of Accelerated Aging Tests, 216  
Residual Tensile Properties of GFRP Reinforcing Bars after Loading in Severe Environments, 226  
Tensile Lap Splicing of Bundled CFRP Reinforcing Bars in Concrete, 217  
Tension Stiffening Model for Concrete Beams Reinforced with Steel and FRP Bars, 1363  
**Base course**  
Degradation of a Granular Base under a Flexible Pavement: DEM Simulation, 56  
Limit-State Curve of Base-Course Material and Its Relevance for Resilient Modulus Testing, 795  
Postconstruction Environmental Monitoring of a Fly Ash-Based Road Subbase, 1993  
Rational Approach for Base Type Selection, 1746  
Structural Performance Monitoring of an Unstabilized Fly Ash-Based Road Subbase, 1769  
**Base isolation**  
Estimating Seismic Demands for Isolation Bearings with Building Overturning Effects, 1548  
Hyperelasticity Model for Finite-Element Analysis of Natural and High Damping Rubbers in Compression and Shear, 440  
**Bathymetry**  
Cross-Shore Internal Waves in Zanpa Coastal Region of Okinawa Island, 1858  
GIS Visualization and Analysis of River Operations Impacts on Endangered Species Habitat, 1816  
**Bayesian analysis**  
Bayesian Network for E/M Impedance-Based Damage Identification, 267  
Bayesian State Estimation Method for Nonlinear Systems and its Application to Recorded Seismic Response, 474  
Bayesian Updating Application into Simulation in the North Edmonton Sanitary Trunk Tunnel Project, 376  
Estimation of Pavement Performance Deterioration using Bayesian Approach, 1144  
Impact of Routine Quality Assurance on Reliability of Bored Piles, 835  
Improved Image Analysis for Evaluating Concrete Damage, 265  
New Measure for Severity of Near-Source Seismic Ground Motion, 1636  
**Beach erosion**  
Discriminating Modes of Shoreline Response to Offshore-Detached Structures, 1873  
**Beaches**  
Modeling Near-Shore Waves, Surface Rollers, and Undertow Velocity Profiles, 1896  
Tracer Studies in Laboratory Beach Simulating Tidal Influences, 668  
**Beam columns**  
Design of Slender Angle Section Beam-Columns by the Direct Strength Method, 1458

## 2006 ASCE TRANSACTIONS

- Experimental Investigation of Aluminum Alloy Thin-Walled Tubular Members in Combined Compression and Bending, 1632  
Minor Axis Moment-Thrust Response Behavior in Steel I-Shaped Members, 1544  
Nonlinear Analysis of Reinforced Concrete Beam—Columns with Bond-Slip, 559  
Plastic Hinge Integration Methods for Force-Based Beam—Column Elements, 1462  
**Beams**  
Auto-Parametric Vibration of a Cable-Stayed-Beam Structure under Random Excitation, 463  
Buckling of Multiwalled Carbon Nanotubes using Timoshenko Beam Theory, 534  
Characterization of Unistrut Connection Method with Pultruded Fiber-Reinforced Polymer Channels, 1342  
Construction of Customized Mass-Stiffness Pairs using Templates, 80  
Damage Assessment in Beams using Inverse Method, 469  
Damage Identification Based on Dead Load Redistribution: Methodology, 1562  
Damping in Shear Beam Structures and Estimation of Drift Response, 522  
Dynamic Stability of Ferromagnetic Beam-Plates with Magnetoelastic Interaction and Magnetic Damping in Transverse Magnetic Fields, 476  
Experimental Evaluation of Reduced Beam Section Connections to Deep Columns, 1473  
Flexural Behavior of Hybrid FRP-Concrete-Steel Double-Skin Tubular Members, 233  
Fracture Analysis of Shear Deformable Bi-Material Interface, 466  
Free Transverse and Lateral Vibration of Beams with Torsional Coupling, 59  
Functionally Graded Stitched Laminates: Illustration on the Example of a Double Cantilever Beam, 78  
Generalized Interstory Drift Spectrum, 1523  
Grace under Pressure, 2013  
Long-Term Deflections of Reinforced Concrete Beams Externally Bonded with FRP System, 236  
Mechanical Grading of Round Timber Beams, 1261  
Modeling Steel Frame Buildings in Three Dimensions. I: Panel Zone and Plastic Hinge Beam Elements, 470  
Modeling Steel Frame Buildings in Three Dimensions. II: Elastofiber Beam Element and Examples, 471  
Monitoring of Steel Railway Floor Beams Prestressed by Steel Plates, 171  
Numerical Simulations of Dynamic Instability of Elastic-Plastic Beams, 461  
On the Comparison of Timoshenko and Shear Models in Beam Dynamics, 554  
On the Free Vibrations of Variable-Arc-Length Beams: Analytical and Experimental, 1517  
Postbuckling of Beam Subjected to Intermediate Force, 436  
Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. I: Theory, 1515  
Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. II: Applications, 1516  
Seismic Behavior of Reduced Beam Section Moment Connections to Deep Columns, 1474

## SUBJECT INDEX

- Selection of Physical and Geometrical Properties for the Confinement of Vibrations in Nonhomogeneous Beams, 72
- Size Effect on Shear Strength of Deep Beams: Investigating with Strut-and-Tie Model, 1507
- Spatial Stability of Shear Deformable Nonsymmetric Thin-Walled Curved Beams: A Centroid-Shear Center Formulation, 573
- Splicing of Precast Concrete-Filled FRP Tubes, 224
- Verifications of Design Equations of Beams Externally Strengthened with FRP Composites, 213
- Bearing capacity**
- Bearing Capacity of Piles Rafts on Soft Clay Soils, 927
- Bearing Capacity of Square and Circular Footings on a Finite Layer of Granular Soil Underlain by a Rigid Base, 916
- Bearing Strength of Slabs on Grade Supporting a Cold-Formed Steel Wall in Low-Rise Building, 87
- Behavior of Reinforced Concrete Column — Steel Beam Roof Level T-Connections under Displacement Reversals, 1540
- Blast Assessment of Load-Bearing Reinforced Concrete Shear Walls, 1982
- Collapse during Construction of a Precast Girder Bridge, 1375
- Concentrically Loaded Circular Steel Plates Bearing on Plain Concrete, 1614
- Design Provisions for Sections Containing Unstiffened Elements with Stress Gradient, 8
- Experimental Behavior of Stiffened and Unstiffened End-Plate Connections under Cyclic Loading, 1572
- Increased Snow Loads and Wind Actions on Existing Buildings: Reliability of the Norwegian Building Stock, 1618
- Influence Zone for End Bearing of Piles in Sand, 891
- Lateral Resistance of Single Pile Located near Geosynthetic Reinforced Slope, 901
- Modified Skew Bending Model for Segmental Bridge with Unbonded Tendons, 109
- Nonconstrained Flagpole Design Formula, 1454
- Predicting End Bearing Capacity of Post-Grouted Drilled Shaft in Cohesionless Soils, 822
- Reliability of Shallow Foundations Subjected to Multidirectional Seismic Loading, 842
- Seismic Bearing Capacity of Shallow Strip Footings Embedded in Slope, 30
- Structural Adequacy of Flexible Pavements with Types and Widths of Shoulders, 1670
- Undrained Bearing Capacity of Square and Rectangular Footings, 27
- Undrained Bearing Capacity of Two-Strip Footings on Spatially Random Soil, 54
- Bed load**
- Approach to Separate Sand from Gravel for Bed-Load Transport Calculations in Streams with Bimodal Sediment, 1051
- Formation Processes and Configuration of Channel-Flow Dominated Alluvial Deltas by Numerical Simulation, 1012
- Performances of Hydraulics and Bedload Sediment Flushing in Rigid Channel using Surge Flows, 1183
- Reanalysis and Correction of Bed-Load Relation of Meyer-Peter and Müller using Their Own Database, 1049
- Bending moments**
- Bed load movement
- Laboratory Measurements of Bed Load Sediment Transport Dynamics, 1875
- Bed materials**
- Multiple Linear Regression Model for Total Bed Material Load Prediction, 983
- Bed roughness**
- Energy Dissipation on Reinforced Block Ramps, 1197
- Bedforms**
- Breaking Antidunes: Cyclic Behavior due to Hysteresis, 993
- Lateral Variations in Suspended Sediment Concentration over Dunes, 1066
- Live-Bed Local Pier Scour Experiments, 995
- Reanalysis and Correction of Bed-Load Relation of Meyer-Peter and Müller using Their Own Database, 1049
- Scour Countermeasures for Wing-Wall Abutments, 988
- Beds**
- Errors in the Bed Shear Stress as Estimated from Vertical Velocity Profile, 1220
- Bench marks**
- Benchmarking Initiatives in the Construction Industry: Lessons Learned and Improvement Opportunities, 1255
- Design and Installation of Deep Benchmarks in Expansive Soil, 1658
- Bending**
- Behavior of Steel Double-Channel Built-Up Chords of Special Truss Moment Frames under Reversed Cyclic Bending, 1571
- Construction of Customized Mass-Stiffness Pairs using Templates, 80
- Design Equation for Offshore Overlap Tubular K-Joints under In-Plane Bending, 1545
- Determination of Stress Intensity Factors for a Cracked Shell under Bending with Improved Shell Theories, 60
- Evaluation of Bending Strength of RC Beams Strengthened with FRP Sheets, 220
- Evaluation of Local Bending in Profile-Wall Polyethylene Pipes, 1762
- Failure Behavior of Spruce Wood under Bending-Shear Combined Stress Field, 1271
- Free Transverse and Lateral Vibration of Beams with Torsional Coupling, 59
- Service-Stage Analysis of Curved Composite Steel-Concrete Bridge Beams, 1629
- Simplified Numerical Method to Evaluate the Mechanical Strength of Cast Iron Water Pipes, 1143
- Splicing of Precast Concrete-Filled FRP Tubes, 224
- Strength and Behavior of Cold-Formed Steel Z-Sections Subjected to Major Axis Bending, 1600
- Structural Response of Elements Combining Ultra-high-Performance Fiber-Reinforced Concretes and Reinforced Concrete, 1615
- Bending moments**
- Pile Behavior due to Excavation-Induced Soil Movement in Clay. I: Stable Wall, 780
- Pile Behavior Due to Excavation-Induced Soil Movement in Clay. II: Collapsed Wall, 781

## Bends, hydraulic

### Bends, hydraulic

Case Study of an S-Shaped Spillway using Physical and Numerical Models, 1021

### Benefit cost ratios

Assessing the Financial Feasibility of Utility-Provided Backup Power during Project Site Planning, 419

Benefit-Cost Analysis of Variable Pricing Projects: QuickRide HOT Lanes, 1682

Benefit-Cost Analysis of Variable Pricing Projects: SR-91 Express Lanes, 1683

Gasification of Aromatic Volatile Organic Compounds Generated from Petroleum and Refinery Industries with Syngas Recycling, 1956

Integrated Management of Irrigation and Urban Storm-Water Infiltration, 1839

### Benefits

Evaluation Model for Information Systems Benefits in Construction Management Processes, 398

### Bentonite

Behavior of a Fiber-Reinforced Bentonite at Large Shear Displacements, 918

Compatibility with Jet A-1 of a GCL Subjected to Freeze—Thaw Cycles, 920

Dam Break Wave of Thixotropic Fluid, 960

Membrane Behavior of Two Backfills from Field-Constructed Soil-Bentonite Cutoff Walls, 892

Slug Test Analysis in Vertical Cutoff Walls. I: Analysis Methods, 817

### Best management practice

Assessing the Hydrologic Performance of Best Management Practices, 1101

BMP Technology in Urban Watersheds: Current and Future Directions, 2052

Case Study: Design and Operation of Sustainable Urban Infiltration Ponds Treating Storm Runoff, 1775

Evaluating Bioretention Hydrology and Nutrient Removal at Three Field Sites in North Carolina, 1232

Impact of Tunnel Reconstruction on Stream Water Quality in Great Smoky Mountains Natl. Park, 1129

Survey of the Construction Industry Relative to the use of CPM Scheduling for Construction Projects, 357

What is Preproject Planning, Anyway?, 1241

### Biaxial loads

New Three-Dimensional Damage Index for RC Buildings with Planar Irregularities, 1585

Seismic Reliability of Low-Rise Nonsymmetric Wood-frame Buildings, 1513

### Biaxial stress

Multilaminate Macromodel for Concrete Masonry: Formulation and Verification, 1635

### Bibliographies

Progressive Collapse of Structures: Annotated Bibliography and Comparison of Codes and Standards, 1407

### Bicycles

Urban Bicycle Route Safety Rating Model Application in Jersey City, New Jersey, 1716

### Bids

Exploratory Study of Knowledge Sharing in Contracting Companies: A Sociotechnical Perspective, 380

## 2006 ASCE TRANSACTIONS

Exploring the Bidding Situation for Economically Most Advantageous Tender Projects using a Bidding Game, 390

Soil Penetration Modeling in Microtunneling Projects, 347

Testing Vickery's Revenue Equivalence Theory in Construction Auctions, 330

### Bifurcations

Nodal Point Relation for the Distribution of Sediments at Channel Bifurcation, 1043

Optimization of an Unstructured First-Order Kinetics Model of Cyclically Operated Bioreactors, 649

### Biochemical oxygen demand

Critical Analysis of Computing Equations for Determination of BOD by Dilution Methods, 651

### Biodegradation

Anaerobic Biodegradation of RDX and TCE: Single- and Dual-Contaminant Batch Tests, 1949

Anaerobic Degradability: Effect of Particulate COD, 637

Bioavailability Prediction of Polycyclic Aromatic Hydrocarbons in Field-Contaminated Sediment by Mild Extractions, 626

Biodegradability of Surfactants under Aerobic, Anoxic, and Anaerobic Conditions, 613

Biodegradation of Phenol with Wastewater as a Cosubstrate in Upflow Anaerobic Sludge Blanket, 759

Biodegradation of Tetrachloroethene by Chitin Fermentation Products in a Continuous Flow Column System, 673

Bioreduction of Hexavalent Chromium in Flow-Through Quartz Sand Columns, 623

Bioremediation of Hazardous Wastes — A Review, 1946

Biotreatment of Surfactant Flush Wastewater from Wood Treatment Soil, 595

Column Study Simulating In Situ Bioremediation of Perchlorate using Acetate as an Organic Substrate, 1950

Continuous Cometabolic Transformation of 4-Chlorophenol in the Presence of Phenol in a Hollow Fiber Membrane Bioreactor, 617

Effects of Nutrient Source and Supply on Crude Oil Biodegradation in Continuous-Flow Beach Microcosms, 591

Evaluation of Decolorization, Mineralization, and Toxicity Reduction of an Azo Dye C.I. Reactive Black 5 in a Countercurrent Bubble Column by Ozone, 1940

Isotopic Fractionation of Tetrachloroethene Undergoing Biodegradation Supported by Endogenous Decay, 681

Predicting the Performance of Activated Carbon-, Coke-, and Soil-Amended Thin Layer Sediment Caps, 688

Procedure to Quantify Biofilm Activity on Carriers used in Wastewater Treatment Systems, 745

Remediation of a TCE Plume using a Three-Component Strategy, 1952

Respirometric Assessment of Primary Sludge Fermentation Products, 590

Treatment of High-Strength Pharmaceutical Waste-water and Removal of Antibiotics in Anaerobic and Aerobic Biological Treatment Processes, 597

## SUBJECT INDEX

### Biofilm

- Anaerobic Filter Treatment of Municipal Wastewater: Biosolids Behavior, 585  
Column Test Studies of Ochre Biofilm Formation in Geotextile Filters, 896  
Development of a Response Surface for Prediction of Nitrate Removal in Sulfur — Limestone Autotrophic Denitrification Fixed-Bed Reactors, 721  
Procedure to Quantify Biofilm Activity on Carriers used in Wastewater Treatment Systems, 745  
The Role of Bioflocculation on Suspended Solids and Particulate COD Removal in the Trickling Filter Process, 655

Simultaneous Removal of Organic Matter and Nitrogen Compounds in Autoaerated Biofilms, 727

Treatment of High-Strength Pharmaceutical Wastewater and Removal of Antibiotics in Anaerobic and Aerobic Biological Treatment Processes, 597

Wastewater Treatment with Biomass Attached to Porous Geotextile Baffles, 614

### Biological operations

Microbiologically Induced Cementation to Control Sand Response to Undrained Shear, 905

### Biological treatment

Aerobic Biofiltration Processes — Advances in Wastewater Treatment, 1969

Anaerobic Filter Treatment of Municipal Wastewater: Biosolids Behavior, 585

Biologically Mediated Reductive Transformation of Ordnance-Related Compounds by Mixed Aquifer Culture using Acetate as the Sole Carbon Source: Laboratory Treatability Studies for Field Demonstration, 1948

Bioremediation of Petroleum-Contaminated Soil using Composting, 1951

Biotreatment of Surfactant Flush Wastewater from Wood Treatment Soil, 595

Continuous Cometabolic Transformation of 4-Chlorophenol in the Presence of Phenol in a Hollow Fiber Membrane Bioreactor, 617

Contrasting the Benefits of Primary Clarification versus Prefermentation in Activated Sludge Biological Nutrient Removal Systems, 720

Effect of Chloride Ions on the Dechlorination of Hexachlorobenzene in the Presence of Zero-Valent Iron, 1965

Effect of Ozone on Filamentous Bulking in a Laboratory Scale Activated Sludge Reactor using Respirometry and INT-Dehydrogenase Activity, 713

Enhancement of Denitrification in Upflow Sludge Bed Reactors with Sludge Wasting, 635

Enhancing Bioremediation with Enzymatic Processes: A Review, 1947

Optimization of an Unstructured First-Order Kinetics Model of Cyclically Operated Bioreactors, 649

Remediation of a TCE Plume using a Three-Component Strategy, 1952

Role of Particle Size and Ammonium Oxidation in Removal of 17 $\alpha$ -Ethynodiol in Bioreactors, 757

Simultaneous Removal of Organic Matter and Nitrogen Compounds in Autoaerated Biofilms, 727

Tracer Studies in Laboratory Beach Simulating Tidal Influences, 668

### Bond stress

Transport of Edible Oil Emulsions in Clayey Sands: One-Dimensional Column Results and Model Development, 1095

Transport of Edible Oil Emulsions in Clayey Sands: 3D Sandbox Results and Model Validation, 1096

Treatment of Dilute Wastewaters using a Novel Submerged Anaerobic Membrane Bioreactor, 604

Treatment of High-Strength Pharmaceutical Wastewater and Removal of Antibiotics in Anaerobic and Aerobic Biological Treatment Processes, 597

### Biomass

Anaerobic Filter Treatment of Municipal Wastewater: Biosolids Behavior, 585

Density and Activity Characterization of Activated Sludge Flocs, 724

Deterministic-Based Model of Slow Sand Filtration. I: Model Development, 697

Deterministic-Based Model of Slow Sand Filtration. II: Model Application, 698

### Bitumen

Bitumen Surface Energy Characterization Using a Contact Angle Approach, 1350

### Blast loads

Behavior and Design of Commercial Multistory Buildings Subjected to Blast, 1398

Blast Assessment of Load-Bearing Reinforced Concrete Shear Walls, 1982

Blast-Resistant Glazing Design, 97

Murrah Building Bombing Revisited: A Qualitative Assessment of Blast Damage and Collapse Patterns, 1399

### Blasting

Blast and Construction Vibration Monitoring and Control: Thirty-Five-Year Perspective, 1971

Curtain Wall Designs for Wind and Blast: Three Case Studies, 99

Managing Rock Blasting Work in Urban Environments, 1978

Soil-Pile Response to Blast-Induced Lateral Spreading. I: Field Test, 793

Static Equivalency in Progressive Collapse Alternate Path Analysis: Reducing Conservatism While Retaining Structural Integrity, 1401

Terrorism Risks and Blast Damage to Built Infrastructure, 1933

Total PM Emission Factors for Steel Grit Used in Dry Abrasive Blasting, 768

### Blocks

Flow-Induced Failure of Cable-Tied Blocks, 964

Strength and Elastic Properties of Stabilized Mud Block Masonry using Cement-Soil Mortars, 1313

Tensile Bond Strength of Soil-Cement Block Masonry Couplets using Cement-Soil Mortars, 1265

### Bolts

Seismic-Resistant Weld-Free Steel Frame Buildings with Mechanical Joints and Hysteretic Dampers, 1525

Strengthening of Interior Slab — Column Connections using a Combination of FRP Sheets and Steel Bolts, 229

### Bond stress

Behavior of Reinforced Concrete Column — Steel Beam Roof Level T-Connections under Displacement Reversals, 1540

- Nonlinear Analysis of Reinforced Concrete Beam — Columns with Bond-Slip, 559
- Bonding**
- Acoustic Emission Damage Assessment of Steel/CFRP Bonds for Rehabilitation, 214
  - Bond Behavior of Near-Surface Mounted CFRP Lamine Strips under Monotonic and Cyclic Loading, 218
  - Comparison of Roles of FRP Sheets, Stirrups, and Steel Fibers in Confining Bond Critical Regions, 222
  - Critical Inclination of Compression Struts in Concrete Beams, 1508
  - Cyclic Behavior of RC Beams Strengthened with Carbon Fiber Sheets Bonded by Inorganic Matrix, 1264
  - Debonding and Fatigue-Related Strain Limits for Externally Bonded FRP, 197
  - Debonding Failures of RC Beams Strengthened with Near Surface Mounted CFRP Strips, 198
  - Design and Evaluation of Fiber-Reinforced Polymer Bond-Type Anchorages and Ground Anchors, 29
  - Determination of Nonlinear Softening Behavior at FRP Composite/Concrete Interface, 484
  - Effects of FRP-Concrete Interface Bond Properties on the Performance of RC Beams Strengthened in Flexure with Externally Bonded FRP Sheets, 1345
  - Energy-Based Modeling Approach for Debonding of FRP Plate from Concrete Substrate, 492
  - Experimental Investigation and Fracture Analysis of Debonding between Concrete and FRP Sheets, 530
  - Fracture Mechanics Method for Mode-I Interface Evaluation of FRP Bonded to Concrete Substrates, 1346
  - Full-Scale Experimental Investigation of Repair of Reinforced Concrete Interstate Bridge using CFRP Materials, 138
  - Laboratory Studies of Two Common Saprolitic Soils in Hong Kong, 864
  - Long-Term Deflections of Reinforced Concrete Beams Externally Bonded with FRP System, 236
  - Modified Skew Bending Model for Segmental Bridge with Unbonded Tendons, 109
  - Moment Redistribution in FRP and Steel-Plated Reinforced Concrete Beams, 200
  - Numerical Model for the Analysis of Unbonded Pre-stressed Members, 1442
  - Peel and Shear Fracture Characterization of Debonding in FRP Plated Concrete Affected by Moisture, 192
  - Prediction Models for Debonding Failure Loads of Carbon Fiber Reinforced Polymer Retrofitted Reinforced Concrete Beams, 193
  - Properties of Asphalt Concrete Layer Interfaces, 1312
  - Tests on the Ductility of Reinforced Concrete Beams Retrofitted with FRP and Steel Near-Surface Mounted Plates, 195
  - Three-Parameter Model for Debonding of FRP Plate from Concrete Substrate, 485
- Bonding strength**
- Bitumen Surface Energy Characterization Using a Contact Angle Approach, 1350
  - Debonding Strength of Steel Beams Strengthened with CFRP Plates, 195
  - Effect of Contact Pressure on Bond Strength of Fiber-Reinforced Polymer to Concrete, 215
  - Tensile Bond Strength of Soil-Cement Block Masonry Couplets using Cement-Soil Mortars, 1265
- Bored piles**
- Impact of Routine Quality Assurance on Reliability of Bored Piles, 835
- Boreholes**
- Estimating the Hydraulic Conductivity of Landfilled Municipal Solid Waste using the Borehole Permeameter Test, 671
  - Local Rotations in Borehole Breakouts — Observed and Modeled Stress Field Rotations and Their Implications for the Petroleum Industry, 52
  - Porohydroelastic Solution for an Inclined Borehole in a Transversely Isotropic Formation, 510
- Bottom ash**
- Soil-Water Characteristic Curves of Stabilized Expansive Soils, 846
  - Volume Change Behaviors of Expansive Soils Stabilized with Recycled Ashes and Fibers, 1292
- Boulders**
- Energy Dissipation on Reinforced Block Ramps, 1197
  - Flow Resistance of Rock Chutes with Protruding Boulders, 986
- Boundaries**
- Application of a Bottom Boundary Layer Model in Contrasting Wave and Current Environments: Grays Harbor, Washington, 1890
  - Diagonal Cartesian Method for the Numerical Simulation of Flow and Suspended Sediment Transport over Complex Boundaries, 1053
  - Method of Fundamental Solutions for Three-Dimensional Stokes Flow in Exterior Field, 467
  - Modified Kostiakov Infiltration Function: Accounting for Initial and Boundary Conditions, 1230
  - Nonlinear Aeroelasticity: Continuum Theory, Flutter/Divergence Speed, and Plate Wing Model, 76
  - Plane Impulse Waves in Reservoirs, 1888
  - Upsetting Tests of Fresh Cementitious Composites for Extrusion, 450
  - Vibration of Open Cylindrical Shells with Stepped Thickness Variations, 514
  - Water Exchange and Sedimentation in an Estuarine Tidal Harbor using Three-Dimensional Simulation, 1893
- Boundary element method**
- Combined Finite- and Boundary-Element Analysis of the Effects of Tunneling on Single Piles, 49
  - Full Two-Dimensional Model for Rolling Resistance: Hard Cylinder on Viscoelastic Foundation of Finite Thickness, 565
  - Laplace Boundary Element Model for the Thermoelastic Consolidation of Multilayered Media, 25
  - Load Transfer in Rammed Aggregate Piers, 51
  - Three-Dimensional Indirect Boundary Element Method Formulation for Dynamic Analysis of Frames Buried in Semi-infinite Elastic Media, 536
- Boundary layer flow**
- Turbulent Boundary Layer Flows above a Porous Surface Subject to Flow Injection, 553
- Boundary shear**
- Investigation of Boundary Shear Stress and Pollutant Detachment from Impervious Surface during Simulated Urban Storm Runoff, 592
  - Reanalysis and Correction of Bed-Load Relation of Meyer-Peter and Müller using Their Own Database, 1049

## SUBJECT INDEX

### Boussinesq equations

- Analyses of Drought Flow in Recession Period, 1085  
Chebyshev Finite-Spectral Method for 1D Boussinesq-Type Equations, 1876  
Fully Nonlinear Boussinesq-Type Equations for Waves and Currents over Porous Beds, 457  
Nearshore Wave Modeling with High-Order Boussinesq-Type Equations, 1887

### Box girders

- Brace Forces in Steel Box Girders with Single Diagonal Lateral Bracing Systems, 1558  
Extending the Possibilities, 2034  
Live-Load Distribution Factors for Prestressed Concrete, Spread Box-Girder Bridge, 160

### Bracing

- Behavior of Steel Double-Channel Built-Up Chords of Special Truss Moment Frames under Reversed Cyclic Bending, 1571  
Brace Forces in Steel Box Girders with Single Diagonal Lateral Bracing Systems, 1558  
Design Equation for Offshore Overlap Tubular K-Joints under In-Plane Bending, 1545  
Ductile Web Fracture Initiation in Steel Shear Links, 1556  
Experimental Evaluation of Reduced Beam Section Connections to Deep Columns, 1473  
Interaction of Top Lateral and Internal Bracing Systems in Tub Girders, 1598

- Seismic Performance of Steel Girder Bridges with Ductile Cross Frames using Single Angle X Braces, 1471

- Seismic Performance of Steel Girder Bridges with Ductile Cross Frames using Buckling-Restrained Braces, 1472

- Seismic-Resistant Weld-Free Steel Frame Buildings with Mechanical Joints and Hysteretic Dampers, 1525

- Strength and Stiffness of Conventional Bridging Systems for Cold-Formed Tee Studs, 1493

- Testing Protocol for Short Links in Eccentrically Braced Frames, 1554

- Testing Protocol for Short Links in Eccentrically Braced Frames, 1555

### Brazil

- Strategic Decision Analysis for Selection of Landfill Sites, 1652

### Breaking waves

- Distributions of Wave Steepness and Surf Parameter, 1855

- Modeling Near-Shore Waves, Surface Rollers, and Undertow Velocity Profiles, 1896

- Nearshore Wave Modeling with High-Order Boussinesq-Type Equations, 1887

- Well-Balanced Finite-Volume Model for Long-Wave Runup, 1866

### Breakwaters

- Generic Design of V-Shape and Vane-Type Breakwaters to Reduce Green Water Load Effects on Deck Structures and Containers of Ships: Case Study, 1860

- Hydrodynamic Characteristics of Pile-Supported Vertical Wall Breakwaters, 1863

- Large-Scale Experiments on Pore Pressure Generation underneath a Caisson Breakwater, 1884

### Bridge decks

- Liquefaction Phenomena underneath Marine Gravity Structures Subjected to Wave Loads, 1885  
Wave Interaction with a Flexible Porous Breakwater in a Two-Layer Fluid, 540

### Brick masonry

- Rehabilitation of Masonry Walls using Unobtrusive FRP Techniques for Enhanced Out-of-Plane Seismic Resistance, 209

### Bricks

- Counterpoint, 2003  
Evaluation of Distress in Supports of Hyperbolic Paraboloid Shell, 1364

- Evolution of Bricks and Brick Masonry in the Early History of its Use in the Region of Today's Serbia, 1341

- Performance of Overburnt Distorted Bricks as Aggregates in Pavement Works, 1352

- Using Crushed Clay Brick as Coarse Aggregate in Concrete, 1319

### Bridge abutments

- Aallowable Bearing Pressures of Bridge Sills on GRS Abutments with Flexible Facing, 855

- Capacity Evaluation of Exterior Sacrificial Shear Keys of Bridge Abutments, 158

- Parallel Walls as an Abutment Scour Countermeasure, 982

- Scour around Bankline and Setback Abutments in Compound Channels, 933

### Bridge construction

- Anatomy of a Successful Partnering Program on a Megaproject, 1915

- Constructability Analysis of the Bridge Superstructure Rotation Construction Method in China, 323

- Construction of a Horizontally Curved Steel I-Girder Bridge. Part I: Erection Sequence, 112

- Construction of a Horizontally Curved Steel I-Girder Bridge. Part II: Inconsistent Detailing, 113

- Crew Production Rates for Contract Time Estimation: Beam Erection, Deck, and Rail of Highway Bridges, 328

- Development of the Vertical Lift Bridge: Squire Whipple to J. A. L. Waddell, 1872-1917, 168

- Experimental Evaluation of Dynamic Effects for a Selected Highway Bridge, 1391

- Fatigue Behavior and Nondestructive Evaluation of Full-Scale FRP Honeycomb Bridge Specimen, 145

- Lessons Learned from an Emergency Bridge Replacement Project, 321

- Rapid Bridge Replacement: Processes, Techniques, and Needs for Improvements, 400

- Rapid Bridge Replacement under Emergency Situation: Case Study, 130

### Bridge decks

- Consistent Approach to Calculating Stresses for Fatigue Design of Welded Rib-to-Web Connections in Steel Orthotropic Bridge Decks, 154

- Construction, Inspection, and Maintenance of FRP Deck Panels, 245

- Designing and Testing of Concrete Bridge Decks Reinforced with Glass FRP Bars, 126

- Distribution of Compressive Stresses in Transversely Posttensioned Concrete Bridge Decks, 110

- Double-Layer Prefabricated FRP Grids for Rapid Bridge Deck Construction: Case Study, 208

## Bridge decks

- Durability of FRP Composite Bridge Deck Materials under Freeze-Thaw and Low Temperature Conditions, 147  
Dynamic Anomalies in a Modular Bridge Expansion Joint, 157  
Effective Slab Width in Prestressed Twin-Girder Composite Decks, 153  
Effects of Pier and Deck Flexibility on the Seismic Response of Isolated Bridges, 115  
Evaluation of Effective Width and Distribution Factors for GFRP Bridge Decks Supported on Steel Girders, 143  
Fatigue Behavior of a Steel-Free FRP — Concrete Modular Bridge Deck System, 150  
FEA of Complex Bridge System with FRP Composite Deck, 196  
High-Cycle Fatigue of Diagonally Cracked Reinforced Concrete Bridge Girders: Field Tests, 173  
Influence of Secondary Elements and Deck Cracking on the Lateral Load Distribution of Steel Girder Bridges, 122  
Penetrating Sealants for Concrete Bridge Decks — Selection Procedure, 156  
Performance Evaluation of FRP Bridge Deck Component under Torsion, 146  
Performance Prediction of Bridge Deck Systems using Markov Chains, 1378  
Reliability-Based Optimization of Fiber-Reinforced Polymer Composite Bridge Deck Panels, 1626  
Structural Behavior of FRP Composite Bridge Deck Panels, 141  
Testing, Analysis, and Evaluation of a GFRP Deck on Steel Girders, 142  
Theoretical and Experimental Analysis of GFRP Bridge Deck under Temperature Gradient, 153  
Thermal Compatibility and Durability of Wearing Surfaces on GFRP Bridge Decks, 149
- ## Bridge design
- Consistent Approach to Calculating Stresses for Fatigue Design of Welded Rib-to-Web Connections in Steel Orthotropic Bridge Decks, 154  
Development of the Vertical Lift Bridge: Squire Whipple to J. A. L. Waddell, 1872-1917, 168  
Formation of Breakup Ice Jams at Bridges, 1056  
Modified Skew Bending Model for Segmental Bridge with Unbonded Tendons, 109  
Placed in Context, 2026  
Rapid Bridge Replacement: Processes, Techniques, and Needs for Improvements, 400  
Rapid Bridge Replacement under Emergency Situation: Case Study, 130  
Royal Treatment, 2031  
Serpentine Span, 2000  
Study of Turkish Bridge Standards Involving a Reinforced Concrete Arch Bridge, 1393  
Sun, Moon, and Stars, 2006
- ## Bridge failure
- Collapse of the Quebec Bridge, 1907, 1373  
Riprap Failure at Circular Bridge Piers, 966
- ## Bridge foundations
- Best Practices of Bridge System Management—A Synthesis, 1258

## 2006 ASCE TRANSACTIONS

### Bridge inspection

- Analysis and Solution to Human-Induced Lateral Vibrations on a Historic Footbridge, 104  
Vibrational Tension Measurement of External Tendons in Segmental Posttensioned Bridges, 161

### Bridge loads

- Approximate Analysis of Bridges for the Routing and Permitting Procedures of Overweight Vehicles, 132

### Bridge maintenance

- Ambient Vibration Monitoring of a Highway Bridge Undergoing a Destructive Test, 163  
Best Practices of Bridge System Management—A Synthesis, 1258

- Construction, Inspection, and Maintenance of FRP Deck Panels, 245

- History and Aesthetics of the Bronx-Whitestone Bridge, 127

- Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Single Maintenance Type, 1537

- Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Combination of Maintenance Types, 1619

- Short and Long-Term Effects of Element Costs and Failure Costs in *Pontis*, 166

### Bridge tests

- Analysis and Solution to Human-Induced Lateral Vibrations on a Historic Footbridge, 104

- Approximate Series Solution for Analysis of FRP Composite Highway Bridges, 225

### Bridges

- Analysis of Long Span Bridge Response to Winds: Building Nexus between Flutter and Buffeting, 1637

- Approximate Analysis of Bridges for the Routing and Permitting Procedures of Overweight Vehicles, 132

- Bridge Blockage and Overbank Flow Simulations using HEC-RAS in the Keeling River during the 2001 Nari Typhoon, 963

- Comparative Study of Fatigue Provisions for the AASHTO Fatigue Guide Specifications and LRFR Manual for Evaluation, 169

- Development, Shake Table Testing, and Design of FRP Seismic Restrainers, 152

- Dynamic Anomalies in a Modular Bridge Expansion Joint, 157

- Experimental Investigation of Clear-Water Local Scour at Pile Groups, 1042

- Fatigue of Corrugated-Web Plate Girders: Analytical Study, 1575

- Identifying Effective and Ineffective Retrofits for Distortion Fatigue Cracking in Steel Bridges Using Field Instrumentation, 178

- Influence of Parapets and Aspect Ratio on Live-Load Distribution, 123

- Live-Load Distribution Factors for Prestressed Concrete, Spread Box-Girder Bridge, 160

- Long-Term Structural Health Monitoring of the San Ysidro Bridge, 1365

- Measurement of Truck Axle Weights by Instrumenting Longitudinal Ribs of Orthotropic Bridge, 155

- Membrane-Based Forms for Innovative FRP Bridge Systems through Structural Optimization, 234

- Normalized Test for Prediction of Debonding Failure in Concrete Elements Strengthened with CFRP, 240

- Past Perfect, 1996

## SUBJ

Polyleth  
dons

Probabi  
ratio

Main

Probabi  
ation

Propert

Bridge

Reliabi

Poly

Renova

Chic

Revisi

New

Seismi

Colu

Stiffne

Slab

System

Br

Torsio

Wood

Fast

Bridge

Perfor

ied,

Place

Study

for

Sun, N

Bridge

Long-

Br

Royal

Trans

10

Bridge

Auto-

Str

Expe

Or

Full-

Ind

In-Ser

vie

Safe

Br

Brid

App

Co

Deve

Perf

ne

Pref

Sl

Ther

fa

## SUBJECT INDEX

- Polyethylene Duct Cracking on Posttensioning Tendons in Florida Segmented Bridges, 1327  
Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Combination of Maintenance Types, 1619  
Probability-Based Bridge Network Performance Evaluation, 167  
Property Modification Factors for Seismically Isolated Bridges, 140  
Reliability-Based Optimization of Fiber-Reinforced Polymer Composite Bridge Deck Panels, 1626  
Renovation of the 17th-Century Ponte Lungo Bridge in Chioggia, Italy, 105  
Revisiting Multimode Coupled Bridge Flutter: Some New Insights, 551  
Seismic Performance of Concrete-Filled FRP Tube Columns for Bridge Substructure, 139  
Stiffness Assessment through Modal Analysis of an RC Slab Bridge before and after Strengthening, 162  
System for In-Service Strain Monitoring of Ordinary Bridges, 170  
Torsional Design of Hybrid Concrete Box Girders, 136  
Wood Members Strengthened with Mechanically Fastened FRP Strips, 228
- Bridges, arch**  
Performance Assessment of a Precast-Concrete, Buried, Small Arch Bridge, 1390  
Placed in Context, 2026  
Study of Turkish Bridge Standards Involving a Reinforced Concrete Arch Bridge, 1393  
Sun, Moon, and Stars, 2006
- Bridges, box girder**  
Long-Term Behavior of Precast Segmental Cantilever Bridges, 137  
Royal Treatment, 2031  
Transverse Analysis of Strutted Box Girder Bridges, 107
- Bridges, cable-stayed**  
Auto-Parametric Vibration of a Cable-Stayed-Beam Structure under Random Excitation, 463  
Experimental Evaluation of Compressive Behavior of Orthotropic Steel Plates for the New San Francisco — Oakland Bay Bridge, 118  
Full-Scale Measurements to Investigate Rain — Wind Induced Cable-Stay Vibration and its Mitigation, 133  
In-Service Evaluation of Cable-Stayed Bridges, Overview of Available Methods, and Findings, 175  
Safety Analysis of Moving Road Vehicles on a Long Bridge under Crosswind, 478
- Bridges, composite**  
Approximate Series Solution for Analysis of FRP Composite Highway Bridges, 225  
Development and Implementation of a Continuous Strain Monitoring System on a Multi-Girder Composite Steel Bridge, 179  
Development of FRP Short-Span Deployable Bridge — Experimental Results, 151  
Performance Evaluation of FRP Bridge Deck Component under Torsion, 146  
Preflex Beams: A Method of Calculation of Creep and Shrinkage Effects, 108  
Thermal Compatibility and Durability of Wearing Surfaces on GFRP Bridge Decks, 149
- Bridges, concrete**  
Case Study of a High-Performance Concrete Bridge in Tennessee, 1992  
Designing and Testing of Concrete Bridge Decks Reinforced with Glass FRP Bars, 126  
Distribution of Compressive Stresses in Transversely Posttensioned Concrete Bridge Decks, 110  
Evaluation of Effective Width and Distribution Factors for GFRP Bridge Decks Supported on Steel Girders, 143  
Experimental Studies on Seismic Behavior of Steel Pile-to-Pile-Cap Connections, 119  
Fuzzy Logic Based Condition Rating of Existing Reinforced Concrete Bridges, 1392  
High-Cycle Fatigue of Diagonally Cracked Reinforced Concrete Bridge Girders: Field Tests, 173  
Less is More, 2008  
Modified Skew Bending Model for Segmental Bridge with Unbonded Tendons, 109  
Nonlinear Finite-Element Analysis of a FRP-Strengthened Reinforced Concrete Bridge, 106  
Penetrating Sealants for Concrete Bridge Decks — Selection Procedure, 156  
Strengthening of Reinforced Concrete Bridge Columns with FRP Wrap, 1991  
Unloading and Reloading Stress — Strain Model for Confined Concrete, 1449
- Bridges, girder**  
Analysis and Design Procedure for FRP-Strengthened Prestressed Concrete T-Girders Considering Strength and Fatigue, 231  
Behavior of Prestressed Concrete Strengthened with Various CFRP Systems Subjected to Fatigue Loading, 238  
Collapse during Construction of a Precast Girder Bridge, 1375  
Construction of a Horizontally Curved Steel I-Girder Bridge. Part I: Erection Sequence, 112  
Construction of a Horizontally Curved Steel I-Girder Bridge. Part II: Inconsistent Detailing, 113  
Development and Implementation of a Continuous Strain Monitoring System on a Multi-Girder Composite Steel Bridge, 179  
Examination of Level of Analysis Accuracy for Curved I-Girder Bridges through Comparisons to Field Data, 120  
Influence of Secondary Elements and Deck Cracking on the Lateral Load Distribution of Steel Girder Bridges, 122  
Seismic Performance of Steel Girder Bridges with Ductile Cross Frames using Single Angle X Braces, 1471  
Seismic Performance of Steel Girder Bridges with Ductile Cross Frames using Buckling-Restrained Braces, 1472  
Sensitivity of Live Load Distribution Factors to Vehicle Spacing, 117  
Shear Behavior of Corrugated Web Bridge Girders, 1457  
Shear Live-Load Distribution Factors for I-Girder Bridges, 124
- Bridges, highway**  
Ambient Vibration Monitoring of a Highway Bridge Undergoing a Destructive Test, 163  
Approximate Series Solution for Analysis of FRP Composite Highway Bridges, 225

## Bridges, highway

- Crew Production Rates for Contract Time Estimation: Beam Erection, Deck, and Rail of Highway Bridges, 328
- Development and Implementation of a Continuous Strain Monitoring System on a Multi-Girder Composite Steel Bridge, 179
- Dynamic Characteristics and Effective Stiffness Properties of Honeycomb Composite Sandwich Structures for Highway Bridge Applications, 203
- Effect of Vehicle Velocity on the Dynamic Amplification of a Vehicle Crossing a Simply Supported Bridge, 128
- Effect of Vehicle Velocity on the Dynamic Amplification of Two Vehicles Crossing a Simply Supported Bridge, 129
- Experimental Evaluation of Dynamic Effects for a Selected Highway Bridge, 1391
- Fatigue Life of Girders with Trapezoidal Corrugated Webs, 1543
- Full-Scale Experimental Investigation of Repair of Reinforced Concrete Interstate Bridge using CFRP Materials, 138
- Fully Nonhydrostatic Modeling of Surface Waves, 479
- Innovative Bridge Condition Assessment from Dynamic Response of a Passing Vehicle, 579
- Less is More, 2008
- Lessons Learned from an Emergency Bridge Replacement Project, 321
- Long-Term Durability of State Street Bridge on Interstate 80, 125
- New Methodology: Permit Checking of Vehicular Overloads, 131
- Optimizing Bridge Network Maintenance Management under Uncertainty with Conflicting Criteria: Life-Cycle Maintenance, Failure, and User Costs, 1620
- Rapid Bridge Replacement: Processes, Techniques, and Needs for Improvements, 400
- Rapid Bridge Replacement under Emergency Situation: Case Study, 130
- Vehicle Condition Surveillance on Continuous Bridges Based on Response Sensitivity, 442

## Bridges, lift

- Development of the Vertical Lift Bridge: Squire Whipple to J. A. L. Waddell, 1872-1917, 168

## Bridges, long span

- Extending the Possibilities, 2034

## Bridges, pedestrian

- Analysis and Solution to Human-Induced Lateral Vibrations on a Historic Footbridge, 104

## Bridges, piers

- Design, Construction, and Installation of a Floating Caisson used as a Bridge Pier, 1869
- Formation of Breakup Ice Jams at Bridges, 1056
- Reduction of Local Scour in the Vicinity of Bridge Pier Groups using Collars and Riprap, 947
- Riprap Failure at Circular Bridge Piers, 966
- Stochastic Flow Analysis for Predicting River Scour of Cohesive Soils, 980
- Vehicle Collision with Bridge Piers, 1

## Bridges, railroad

- Investigation of Longitudinal Forces in a Concrete Railroad Trestle, 165
- Modifying Merchants Bridge, 2022

## 2006 ASCE TRANSACTIONS

## Bridges, skew

- Orthogonal Effects in Seismic Analysis of Skewed Bridges, 116

## Bridges, spans

- Development of FRP Short-Span Deployable Bridge—Experimental Results, 151

Less is More, 2008

Serpentine Span, 2000

## Bridges, steel

- Assessment of Bridge Remaining Fatigue Life through Field Strain Measurement, 177

- Characterization of Material Properties of HPS-485W (70 W) TMCP for Bridge Girder Applications, 114

- Construction of a Horizontally Curved Steel I-Girder Bridge. Part I: Erection Sequence, 112

- Construction of a Horizontally Curved Steel I-Girder Bridge. Part II: Inconsistent Detailing, 113

- Development and Implementation of a Continuous Strain Monitoring System on a Multi-Girder Composite Steel Bridge, 179

- Estimating Fatigue Life of Bridge Components Using Measured Strains, 176

- Examination of Level of Analysis Accuracy for Curved I-Girder Bridges through Comparisons to Field Data, 120

Extending the Possibilities, 2034

- Fatigue Damage of Steel Bridges Due to Dynamic Vehicle Loads, 135

- Girder Differential Deflection and Distortion-Induced Fatigue in Skewed Steel Bridges, 121

- Influence of Secondary Elements and Deck Cracking on the Lateral Load Distribution of Steel Girder Bridges, 122

- Long-Term Durability of State Street Bridge on Interstate 80, 125

- Optimal Inspection Scheduling of Steel Bridges using Nondestructive Testing Techniques, 134

Serpentine Span, 2000

- Truck Models for Improved Fatigue Life Predictions of Steel Bridges, 111

## Bridges, suspension

- Control of Suspension Bridge Nonlinear Vibrations due to Moving Loads, 500

- History and Aesthetics of the Bronx-Whitestone Bridge, 127

## Bridges, wooden

- Time-Dependent Behavior of Posttensioned Wood Howe Bridges, 1480

## Brittle failure

- Behavior and Design of Commercial Multistory Buildings Subjected to Blast, 1398

## Brittleness

- Reliability, Brittleness, Covert Understrength Factors, and Fringe Formulas in Concrete Design Codes, 1439

## Bubbles

- Fundamentals of Bubble Formation during Coagulation and Sedimentation Processes, 664

- Ozonation of 2-Chlorophenol in Aqueous Solutions with a Packed Contactor, 775

- Response of a Tropical Reservoir to Bubbler Destratification, 682

## SUBJECT INDEX

### Buckling

Behavior of Steel Double-Channel Built-Up Chords of Special Truss Moment Frames under Reversed Cyclic Bending, 1571

Buckling of Conventionally Sheathed Stud Walls, 1514

Buckling of GFRP Columns: An Empirical Approach to Design, 242

Buckling of Multiwalled Carbon Nanotubes using Timoshenko Beam Theory, 534

Buckling of Simply Supported Rectangular Reissner—Mindlin Plates Subjected to Linearly Varying In-Plane Loading, 491

Composite T-Beams using Reduced-Scale Rectangular FRP Tubes and Concrete Slabs, 205

Compression Behavior of Nonslender Cylindrical Steel Members with Small and Large-Scale Geometric Imperfections, 1560

Creep Buckling of Shallow Parabolic Concrete Arches, 1601

Design Analysis for Buckling of Tanks and Silos, 1443

Design of Slender Angle Section Beam-Columns by the Direct Strength Method, 1458

Distortional Buckling of Cold-Formed Stainless Steel Sections: Experimental Investigation, 1488

Distortional Buckling of Cold-Formed Stainless Steel Sections: Finite-Element Modeling and Design, 1489

Distortional Buckling of Cold-Formed Steel Members, 1503

Distortional Buckling Tests on Cold-Formed Steel Beams, 1490

Ductile Web Fracture Initiation in Steel Shear Links, 1556

Elastic Buckling of Laminated Conical Shells Using a Hierarchical High-Fidelity Analysis Procedure, 575

Energy Capacity Criterion for the Design of Columns against Collapse, 493

Experimental Investigation of Aluminum Alloy Thin-Walled Tubular Members in Combined Compression and Bending, 1632

Full-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1500

"Giant Superelasticity Effect" in NiTi Superelastic Materials and Its Applications, 1360

Influence of Functionally Graded Material on Buckling of Skew Plates under Mechanical Loads, 528

Limitations of FRP Jacking in Confining Old-Type Reinforced Concrete Members in Axial Compression, 190

Local-Plate and Distortional Postbuckling Behavior of Cold-Formed Steel Lipped Channel Columns with Intermediated Stiffeners, 1491

The Most Degrading Postbuckling Mode of Pin-Jointed Structures, 513

Numerical Simulation of High-Strength Steel Box-Shaped Columns Failing in Local and Overall Buckling Modes, 1492

Plastic and Lateral-Torsional Buckling Behavior of Single Cold-Formed Channels Connected Back-to-Back, 1559

Seismic Performance of Steel Girder Bridges with Ductile Cross Frames using Single Angle X Braces, 1471

Seismic Performance of Steel Girder Bridges with Ductile Cross Frames using Buckling-Restrained Braces, 1472

Sequential Hybrid Inverse Mapping for State-Specified Design of Frames, 1581

## Building design

Shear Behavior of Corrugated Web Bridge Girders, 1457

Shear-Flexural Buckling of Cantilever Columns under Uniformly Distributed Load, 557

Stability and Ductility of Thin-Walled Circular Steel Columns under Cyclic Bidirectional Loading, 1599

Strength and Stiffness of Conventional Bridging Systems for Cold-Formed Cee Studs, 1493

Study of a Honeycomb-Type Rigidified Inflatable Structure for Housing, 1603

Tests and Design of Aluminum Alloy Compression Members, 1546

Use of Fiber-Reinforced Polymer Composite Elements to Enhance Structural Steel Member Ductility, 223

### Budgets

Contingency Planning in Project Selection using Multi-objective Optimization and Chance Constraints, 1148

### Buffeting

Analysis of Long Span Bridge Response to Winds: Building Nexus between Flutter and Buffeting, 1637

### Building codes

Adoption of the International Residential Code in a High Natural Hazards Region — An Overview, 85

Behavior and Design of Commercial Multistory Buildings Subjected to Blast, 1398

Database-Assisted Design of Low-Rise Buildings: Aerodynamic Considerations for a Practical Interpolation Scheme, 1529

Exposure Categories and Transitions for Design Wind Loads, 1612

Hurricane Mitigation of the Florida House Learning Center, 1382

Large Wind Missile Impact Capacity of Residential and Light Commercial Buildings, 1990

Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-05 (CD-ROM), 2076

New Design Procedure for Wind Uplift Resistance of Architectural Metal Roofing Systems, 100

Nonlinear EI Equation for Slender Composite Columns Bending about the Minor Axis, 1596

Nonlinear Equation for Flexural Stiffness of Slender Composite Columns in Major Axis Bending, 1477

Performance-Based Structural Fire Safety, 1369

Progressive Collapse of Structures: Annotated Bibliography and Comparison of Codes and Standards, 1407

Return Period of Recorded Ground Motion, 1522

Seismic Site Response for Near-Fault Forward Directivity Ground Motions, 928

Standards Governing Glazing Design in Hurricane Regions, 94

Static and Cyclic Racking Performance of Autoclaved Aerated Concrete Cladding Panels, 86

### Building design

Application of Hygrothermal Modeling Tool to Assess Moisture Response of Exterior Walls, 101

Braced for the Future, 2040

Counterpoint, 2003

Distributed Hybrid Genetic Algorithms for Structural Optimization on a PC Cluster, 1625

Generalized Interstory Drift Spectrum, 1523

Geometry Lesson, 2012

Impact of Quality on Building Costs, 1157

## **Building design**

- Landmark Library, 2021  
Latent Building Defects: Causes and Design Strategies to Prevent Them, 1386  
Material Flow-Based Facility Layout Analysis of a Manufactured Housing Production Plant, 103  
Mitigating Risk from Abnormal Loads and Progressive Collapse, 1397  
Overture to Omaha, 2024  
Prototype Tool for Mechanical, Electrical, and Plumbing Coordination, 249  
Return Period of Recorded Ground Motion, 1522  
Starting Over, 2035  
Survey of Sustainable Building Design Practices in North America, Europe, and Asia, 88
- Buildings**  
Analyses of a Two-Story Unreinforced Masonry Building, 1505  
Challenges of Underpinning Two Landmark Buildings, 1985  
Constructability Practices to Manage Sustainable Building Knowledge, 91  
Construction Delays and Their Causative Factors in Nigeria, 354  
Coupled Building Control Considering the Effects of Building/Connector Configuration, 1524  
Example of a Hybrid Life-Cycle Assessment of Construction Processes, 1158  
Increased Snow Loads and Wind Actions on Existing Buildings: Reliability of the Norwegian Building Stock, 1618  
Mitigation of Soil Movements from Pile Driving, 1977  
Neural Networks and Principal Component Analysis for Identification of Building Natural Periods, 279  
New Static Sunshade Design for Energy-Efficient Buildings, 422  
The Paper Alternative, 2015  
Probabilistic Model for the Assessment of Historic Buildings under Permanent Loading, 1361
- Buildings, high-rise**  
An Avoidable Tragedy, 2039  
Experimental Verification and Full-Scale Deployment of Global Positioning System to Monitor the Dynamic Response of Tall Buildings, 1561  
Frequency Dependence of Human Response to Wind-Induced Building Motion, 1468  
Implementation of a Feasible Control Design Process Incorporating Robustness Criteria for Wind-Excited High-Rise Buildings, 1448  
Landmark Reinvented, 2007  
Nonlinear Stiffness Design Optimization of Tall Reinforced Concrete Buildings under Service Loads, 1536  
Shaking Table Test of a 1:20 Scale High-Rise Building with a Transfer Plate System, 1610  
Starting Over, 2035  
Validating Wind-Induced Response of Tall Buildings: Synopsis of the Chicago Full-Scale Monitoring Program, 1588
- Buildings, low-rise**  
Bearing Strength of Slabs on Grade Supporting a Cold-Formed Steel Wall in Low-Rise Building, 87  
Database-Assisted Design of Low-Rise Buildings: Aerodynamic Considerations for a Practical Interpolation Scheme, 1529

## **2006 ASCE TRANSACTIONS**

- Recommendations for Seismic Evaluation and Retrofit of Low-Rise URM Structures, 1506  
Seismic Reliability of Low-Rise Nonsymmetric Wood-frame Buildings, 1513
- Buildings, multistory**  
Approximate Floor Acceleration Demands in Multistory Buildings: I: Formulation, 6  
Generalized Interstory Drift Spectrum, 1523  
Modal Seismic Control of Building Frames by Artificial Neural Network, 252
- Buildings, nonresidential**  
Study of Mitigation Strategies for Progressive Collapse of a Reinforced Concrete Commercial Building, 1404
- Buildings, office**  
Life-Cycle Assessment of Office Buildings in Europe and the United States, 1138  
Seismic Response and Damage Detection Analyses of an Instrumented Steel Moment-Framed Building, 1591  
Starting Over, 2035
- Buildings, public**  
Braced for the Future, 2040  
Counterpoint, 2003  
A Good Move, 2037  
Landmark Library, 2021  
Overture to Omaha, 2024  
Procurement Routes in Public Building and Construction Projects, 356  
Regenesis, 2029
- Buildings, residential**  
Adoption of the International Residential Code in a High Natural Hazards Region — An Overview, 85  
Assessment of Potential Seismic Damage to Residential Unreinforced Masonry Buildings in Northern Illinois, 1979  
Bearing Strength of Slabs on Grade Supporting a Cold-Formed Steel Wall in Low-Rise Building, 87  
Comparing High and Low Residential Density: Life-Cycle Analysis of Energy Use and Greenhouse Gas Emissions, 1772  
Effect of Envelope on Residential Cooling Load Coupled with Use of Solar/Photovoltaic Panels, 428  
Experimental Capacity Assessment of Cold-Formed Boxed Stud and C Stud Wall Systems used in Australian Residential Construction, 1502  
Impact of Property Management Services on Affordable Housing Residents in Atlanta, Georgia, 1387  
New Method to Evaluate the Nailing Performance of Extruded High-Performance Fiber-Reinforced Cementitious Composites for Residential Applications, 1309  
Relationship between Housing Affordability and Economic Development in Mainland China — Case of Shanghai, 1779  
Residential Building Loads: Review and Roadmap for the Future, 2083  
Residential Construction Lot Grading Approval Process Optimization: Case Study of City of Edmonton, 409
- Build/Operate/Transfer**  
Generalized Economic Modeling for Infrastructure and Capital Investment Projects, 1139

## SUBJECT INDEX

## California

- Bulkheads**  
Thermohydromechanical Modeling of a Full-Scale Tunnel Sealing Clay Bulkhead, 778
- Buoyant jets**  
Global Behaviors of a Round Buoyant Jet in a Countercurrent, 991
- Numerical Simulation of Obstructed Round Buoyant Jets in a Static Uniform Ambient, 974
- Bureau of Reclamation**  
Hydrologic Modeling Inventory: Cooperative Research Effort, 1175
- Buried pipes**  
Compression Behavior of Nonslender Cylindrical Steel Members with Small and Large-Scale Geometric Imperfections, 1560
- Development of Real-Time Safety Control System for Urban Gas Supply Network, 801
- Holistic Approach for Assessing the Vulnerability of Buried Pipelines to Earthquake Loads, 1923
- Reliability Analysis of Deflection of Buried Flexible Pipes, 1754
- Soil Restraint to Oblique Movement of Buried Pipes in Dense Sand, 1681
- Thermal Transfer Analysis of a Freezing Soil Medium with an Embedded Pipeline, 181
- Buried structures**  
Burial of Short Cylinders Induced by Scour under Combined Waves and Currents, 1897
- Laboratory Study of Liquefaction due to Wave-Seabed Interaction, 856
- Performance Assessment of a Precast-Concrete, Buried, Small Arch Bridge, 1390
- Three-Dimensional Indirect Boundary Element Method Formulation for Dynamic Analysis of Frames Buried in Semiinfinite Elastic Media, 536
- Buses**  
Developing Integrated Schedules for Urban Rail and Feeder Bus Operation, 1788
- Operational Integration of Suburban Railway and Public Buses — Case Study of Mumbai, 1718
- Optimal Transit Route Network Design Problem with Variable Transit Demand: Genetic Algorithm Approach, 1667
- Business management**  
Characteristics for Leveraging Value Management Processes on Capital Facility Projects, 1253
- Construction Business Automation System, 296
- Determinants of International Architectural, Engineering, and Construction Firms' Project Success in China, 309
- Interactions between Business and Financial Strategies of Large Engineering and Construction Firms, 1254
- Leveraging Personality for Business Success, 1921
- Operations Management for Engineering Consulting Firms: A Case Study, 1249
- Cables**  
Control of Suspension Bridge Nonlinear Vibrations due to Moving Loads, 500
- Deployment of Fiber Optic Networks through Underground Sewers in North America, 1737
- Dynamic Anomalies in a Modular Bridge Expansion Joint, 157
- Dynamic Behavior of Nonlinear Cable System. IV, 464
- Experimental Verification of Smart Cable Damping, 462
- Full-Scale Measurements to Investigate Rain — Wind Induced Cable-Stay Vibration and its Mitigation, 133
- Nonlinear Analytical Solution for Cable Truss, 446
- Shape Selection for Lattice Structures, 1608
- Symmetric Catenary of a Uniform Elastic Cable of Neo-Hookean Material, 509
- Cadmium**  
Effect of Cd(II) on Different Bacterial Species Present in a Single Sludge Activated Sludge Process for Carbon and Nutrient Removal, 602
- Evaluating an Electrokinetically Driven Extraction Method for Measuring Heavy Metal Soil Contamination, 641
- Influence of Pore-Water Velocity on Transport Behavior of Cadmium: Equilibrium versus Nonequilibrium, 1958
- Caissons**  
Design, Construction, and Installation of a Floating Caisson used as a Bridge Pier, 1869
- Calcium carbonate**  
Assessing the Carbonation Behavior of Cementitious Materials, 1351
- Calibration**  
Assessment of Variable Uncertainties for Reliability-Based Design of Foundations, 888
- Automatic Speed Calibration Methodology for Traffic Monitoring Sites, 1666
- Calibrated Models of Deicing Agent Solids, Pavement Texture, and Specific Conductivity of Highway Runoff, 761
- Calibrating Holistic Water Resources — Economic Models, 1844
- Calibration of Strapdown Magnetometers in Magnetic Field Domain, 68
- Case Study: Numerical Simulations of Debris Flow below Stože, Slovenia, 943
- Comparison of Two Model Concepts for Simulation of Nitrogen Removal at a Full-Scale Biological Nutrient Removal Pilot Plant, 636
- Hydrologic Modeling of an Eastern Pennsylvania Watershed with NEXRAD and Rain Gauge Data, 1128
- Parameter Estimation for the Nonlinear Muskingum Model using the BFGS Technique, 1217
- Resistance Factors for Use in Shallow Foundation LRFD, 889
- California**  
Benefit-Cost Analysis of Variable Pricing Projects: SR-91 Express Lanes, 1683
- Deflection Protection, 2032
- Estimating Pollutant Mass Accumulation on Highways during Dry Periods, 711
- Evaluation of the National Weather Service Operational Hydrologic Model and Forecasts for the American River Basin, 1111
- Experimental Evaluation of Compressive Behavior of Orthotropic Steel Plates for the New San Francisco — Oakland Bay Bridge, 118
- Exploratory Map Animation for Post-Event Analysis of Wildfire Protective Action Recommendations, 1922

## California

- Fourway: Graphical Tool for Performance-Based Earthquake Engineering, 1564  
Impact of Politics on the Colorado River Basin Water Agreement: In-Depth Administrative Analysis, 1911  
Measurement of Light Interception by Navel Orange Orchard Canopies: Case Study of Lindsay, California, 1165  
Parameter Variation and Part-Load Efficiencies of Wave Energy Conversion, 421  
Regenesis, 2029

- Short- and Long-Term Effects of Element Costs and Failure Costs in *Pontis*, 166  
Watershed Environmental Hydrology Model: Environmental Module and Its Application to a California Watershed, 1099

## California bearing ratio

- Compaction Delay Effects on Properties of Lime-Treated Soil, 1287  
Factors Affecting Portable Falling Weight Deflectometer Measurements, 853  
Influence of Compactive Efforts on Lime-Slag Treated Tropical Black Clay, 1280  
Stabilizing Soft Fine-Grained Soils with Fly Ash, 1291

## Canada

- Application of Lean Concepts and Simulation Analysis to Improve Efficiency of Drainage Operations Maintenance Crews, 317  
Automated Access, 2036  
Bivariate Flood Frequency Analysis Using the Copula Method, 1086  
Case Study: Refinement of Hydraulic Operation of a Complex CSO Storage/Treatment Facility by Numerical and Physical Modeling, 944  
Collapse during Construction of a Precast Girder Bridge, 1375  
Collapse of the Quebec Bridge, 1907, 1373  
Comparing High and Low Residential Density: Life-Cycle Analysis of Energy Use and Greenhouse Gas Emissions, 1772  
Compilation of a Map of Recent Vertical Crustal Movements in Eastern Canada using Geographic Information System, 1663  
Evaluating the Safety Risk of Narrow Medians using Reliability Analysis, 1701  
Ice Stresses in Reservoirs: Effect of Water Level Fluctuations, 183  
Monitoring Snow-Cover Depletion by Coupling Satellite Imagery with a Distributed Snowmelt Model, 1808  
Residential Construction Lot Grading Approval Process Optimization: Case Study of City of Edmonton, 409  
Treatment of Acid Rock Drainage in a Meromictic Mine Pit Lake, 640  
Urban Runoff Quality Characterization and Load Estimation in Saskatoon, Canada, 750

## Canals

- Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Theory, 1186  
Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Simulation Results, 1187  
Development of the Vertical Lift Bridge: Squire Whipple to J. A. L. Waddell, 1872-1917, 168

## 2006 ASCE TRANSACTIONS

- Optimization of Frequency Distribution of Storm-Water Discharges for Coastal Ecosystem Restoration, 1835

- Salt River Project Canal Automation Pilot Project: Simulation Tests, 1180

- Tuning of Robust Distant Downstream PI Controllers for an Irrigation Canal Pool. I: Theory, 1204

- Tuning of Robust Distant Downstream PI Controllers for an Irrigation Canal Pool. II: Implementation Issues, 1205

## Cantilevers

- Functionally Graded Stitched Laminates: Illustration on the Example of a Double Cantilever Beam, 78

## Capacity

- Probabilistic Model for Signalized Intersection Capacity with a Short Right-Turn Lane, 1685

## Capital costs

- CAPM-Based Valuation of Financial Government Supports to Infeasible and Risky Private Infrastructure Projects, 312

- Cost-Effectiveness of Railway Infrastructure Renewal Maintenance, 1729

- Framework to Support the Representations of Semantic Mappings for a Hybrid Integration Strategy, 268

- Modeling Cost Escalation in Large Infrastructure Projects, 373

## Carbon

- Biologically Mediated Reductive Transformation of Ordnance-Related Compounds by Mixed Aquifer Culture using Acetate as the Sole Carbon Source: Laboratory Treatability Studies for Field Demonstration, 1948

- Buckling of Multiwalled Carbon Nanotubes using Timoshenko Beam Theory, 534

- Combined Removal of Carbon and Nitrogen in an Integrated UASB-Jet Loop Reactor Bioreactor System, 669

- Ecofriendly Concrete with High Volume of Lagoon Ash, 1310

- Effect of Cd(II) on Different Bacterial Species Present in a Single Sludge Activated Sludge Process for Carbon and Nutrient Removal, 602

- Nutrient Removal in a Cold-Region Wastewater Stabilization Pond: Importance of Ammonia Volatilization, 633

- Simultaneous Removal of Carbon and Nitrogen from Swine Wastewater using an Immobilized-Cell Reactor, 630

## Carbon dioxide

- Assessing the Carbonation Behavior of Cementitious Materials, 1351

## Carbon monoxide

- Zirconia-Supported Copper Oxide — A Catalyst for Removal of Vehicular Exhaust Gas Pollutants, 707

## Carbonation

- Assessing the Carbonation Behavior of Cementitious Materials, 1351

- Performance of a Penetrating Corrosion Inhibitor in Concrete Affected by Carbonation-Induced Corrosion, 1359

## Case reports

- Case Study: Application of GPR to Detection of Hidden Dangers to Underwater Hydraulic Structures, 932

## SUBJECT INDEX

## Cements

- Case Study: Dam Safety during Construction, Lessons of the Overtopping Diversion Works at Aguamilpa Dam, 1045  
Case Study: Mapping Tsunami Hazards Associated with Debris Flow into a Reservoir, 931  
Case Study of a High-Performance Concrete Bridge in Tennessee, 1992  
Case Study of Factors Affecting Urban Residential Construction in St. Louis, 1786  
Case Study: Refinement of Hydraulic Operation of a Complex CSO Storage/Treatment Facility by Numerical and Physical Modeling, 944  
Case Study: Sediment Control at Water Intake for Large Thermal-Power Station on a Small River, 975  
Classroom Assessment and Redesign of an Undergraduate Steel Design Course: A Case Study, 1433  
Considerations for Storm-Water Outfalls off Exposed Coasts, 1233  
Contractor Key Competitiveness Indicators: A China Study, 329  
Curtain Wall Designs for Wind and Blast: Three Case Studies, 99  
Detection of Illegal Dump Deposit with GPR: Case Study, 1955  
Development of a Simple Phosphorus Model for a Large Urban Watershed: A Case Study, 642  
Disaster Recovery System Model with E-Government Case Study, 1937  
Downside Risks in Construction Projects Developed by the Civil Service: The Case of Spain, 372  
Fundamental Principles for Avoiding Congested Work Areas — A Case Study, 1989  
Health Risk Assessment for a Contaminated Site: A Case Study, 1964  
Identification of Contaminant Sources in Water Distribution Systems using Simulation – Optimization Method: Case Study, 1827  
In Situ Pore Pressure Responses of Native Peat and Soil under Train Load: A Case Study, 904  
Key Performance Indicators for Strategic Healthcare Facilities Maintenance, 322  
Legal Issues Associated with Emergent Actor Roles in Innovative U.K. Procurement: Prime Contracting Cast Study, 1413  
Liquefaction-Induced Lateral Spreading in Near-Fault Regions during the 1999 Chi-Chi, Taiwan Earthquake, 922  
Managing Irrigation for Better River Ecosystems — A Case Study of the Middle Rio Grande, 1229  
Modeling and Analyzing the Impact of Technology on Data Capture and Transfer Processes at Construction Sites: A Case Study, 401  
Moving a Reinforced-Concrete Building: Case Study, 299  
Multiobjective Strategic Evaluation for Urban Development in Kaohsiung, Taiwan: Case Study, 1791  
Operations Management for Engineering Consulting Firms: A Case Study, 1249  
Rapid Bridge Replacement under Emergency Situation: Case Study, 130  
Relationship between Housing Affordability and Economic Development in Mainland China — Case of Shanghai, 1779  
Residential Construction Lot Grading Approval Process Optimization: Case Study of City of Edmonton, 409  
Route Selection for a New Transportation System in Hillside Urban Areas: A Case Study in Nagasaki, Japan, 1781  
Safety Climate in Construction Industry: A Case Study in Hong Kong, 345  
Seismic Response of a Composite Landfill Cover, 819  
Sudden Failure of a Heavily Loaded Container Pavement, 912  
**Cast iron**  
Field Monitoring of a Permeable Reactive Barrier for Removal of Chlorinated Organics, 605  
Simplified Numerical Method to Evaluate the Mechanical Strength of Cast Iron Water Pipes, 1143  
**Catchments**  
Estimating Infiltration in the Upper Split Wash Watershed, Yucca Mountain, NV, 1083  
Hybrid, Markov Chain-Based Model for Daily Streamflow Generation at Multiple Catchment Sites, 1097  
Peak Discharge Estimation using Analytical Probabilistic and Design Storm Approaches, 1075  
Runoff Quality Analysis of Urban Catchments with Analytical Probabilistic Models, 1801  
**Cavitation**  
Development of Air Concentration on Chute Spillways, 1023  
Investigation of the Influence of Sprinkler Fins and Dissolved Air on Jet Flow, 1168  
Stress Zones Near Displacement Piers: I. Plastic and Liquefied Behavior, 782  
**Cement grouting**  
Factors Affecting the Creep Behavior of Grouted Sand, 823  
Hydrocarbon Residuals and Containment in Microfine Cement Grouted Sand, 1284  
Porosity Fluctuations in Desiccating Samples of Grout-Stabilized Soil, 1289  
**Cementation**  
Accounting for Soil Aging When Assessing Liquefaction Potential, 811  
Effect of Structure on the Geotechnical Properties of Bauxite Residue, 792  
Small-Strain Behavior of Granular Soils. I: Model for Cemented and Uncemented Sands and Gravels, 876  
Upsetting Tests of Fresh Cementitious Composites for Extrusion, 450  
**Cements**  
Application of Cement-Based Piezoelectric Sensors for Monitoring Traffic Flows, 1724  
Effect of Early-Age Temperature Rise on the Stability of Rapid-Hardening Cement Fiber Composites, 1325  
Electrokinetic Nanoparticle Treatment of Hardened Cement Paste for Reduction of Permeability, 1323  
Fundamental Characteristics of Cement-Admixed Clay in Deep Mixing, 1279  
High-Volume Fly Ash Concrete: Analysis and Application, 1976  
Microstructure and Compactive Instabilities of a Stabilized Residue, 1290  
New Method to Evaluate the Nailing Performance of Extruded High-Performance Fiber-Reinforced Cementitious Composites for Residential Applications, 1309

## Cements

- Small-Strain Shear Moduli of Chemically Stabilized Sulfate-Bearing Cohesive Soils, 808  
Solidification of New Zealand Harbor Sediments using Cementitious Materials, 1294  
Stress Path Testing of Realistically Cured Lime and Lime/Cement Stabilized Clay, 1288  
Study of Effects of Natural Pozzolan on Properties of Cement Mortars, 1356

## Centrifuge

- DSC Model for Soil and Interface Including Liquefaction and Prediction of Centrifuge Test, 799

Strength Loss and Localization at Silt Interlayers in Slopes of Liquefied Sand, 7

## Centrifuge model

- Centrifuge Model Studies of the Seismic Response of Reinforced Soil Slopes, 813  
Centrifuge Testing of LNAPL Migration and Soil Vapor Extraction for Soil Remediation, 1943  
Effect of Penetration Rate on Penetrometer Resistance in Clay, 887  
Geotechnical Physical Modeling for Education: Learning Theory Approach, 1431  
Pile Behavior due to Excavation-Induced Soil Movement in Clay. I: Stable Wall, 780  
Pile Behavior Due to Excavation-Induced Soil Movement in Clay. II: Collapsed Wall, 781

## Change management

- Reliability and Stability Buffering Approach: Focusing on the Issues of Errors and Changes in Concurrent Design and Construction Projects, 333  
Web-Enabled System Dynamics Model for Error and Change Management on Concurrent Design and Construction Projects, 273

## Channel design

- Downstream Hydraulic Geometry of Alluvial Channels, 1067

## Channel flow

- Electrocoagulation of Silica Nanoparticles in Wafer Polishing Wastewater by a Multichannel Flow Reactor: A Kinetic Study, 772  
Electromagnetic Wave Surface Velocimetry, 946  
Evaluation of the Micromodel: An Extremely Small-Scale Movable Bed Model, 965  
Formation Processes and Configuration of Channel-Flow Dominated Alluvial Deltas by Numerical Simulation, 1012

Fuzzy Analysis of Slope-Area Discharge Estimates, 1171

Green's Function of the Linearized de Saint-Venant Equations, 447

Stage-Discharge Relations for Low-Gradient Tidal Streams using Data-Driven Models, 979

## Channel morphology

Downstream Hydraulic Geometry of Alluvial Channels, 1067

## Channels

- Asymmetric Flow in Symmetric Supercritical Expansions, 953  
Capillarity and Evaporation Exacerbated Seepage Losses from Unlined Channels, 1235  
Critical Bed Shear Stress for Unisize Sediment, 949  
Distortion Buckling of Cold-Formed Stainless Steel Sections: Experimental Investigation, 1488

## 2006 ASCE TRANSACTIONS

- Distortion Buckling of Cold-Formed Stainless Steel Sections: Finite-Element Modeling and Design, 1489  
Finite-Element Simulation and Design of Cold-Formed Steel Channels Subjected to Web Crippling, 1633  
Hydraulic Jumps in Sloping Channels: Sequent Depth Ratio, 1037  
Nodal Point Relation for the Distribution of Sediments at Channel Bifurcation, 1043

## Chemical grouting

- Factors Affecting the Creep Behavior of Grouted Sand, 823

## Chemical properties

- Coupled Mechanical and Chemical Behavior of Bentonite Engineered with a Controlled Organic Phase, 907

Porochemoelastic Solution for an Inclined Borehole in a Transversely Isotropic Formation, 510

## Chemical treatment

- Evaluating Ozone as a Remedial Treatment for Removing RDX from Unsaturated Soils, 763

How Reliable is the Plasticity Index for Estimating the Liquefaction Potential of Clayey Sands?, 790

## Chemicals

- Chromium Redox Chemistry in Drinking Water Systems, 694

Development of a University Laboratory Chemical Inventory and Exchange Program, 1945

Response of Air-Entrained Concrete to Severe Chemical Aggression, 1262

## Chesapeake Bay

- Surface Analysis of Chesapeake Bay Water Quality Response to Different Nutrient and Sediment Loads, 625

## Chicago

An Avoidable Tragedy, 2039

A Good Move, 2037

Through it All, 2004

- Validating Wind-Induced Response of Tall Buildings: Synopsis of the Chicago Full-Scale Monitoring Program, 1588

## China

Above it All, 2042

- Comparative Analysis of Data-Driven and GIS-Based Conceptual Rainfall-Runoff Model, 1070

Constructability Analysis of the Bridge Superstructure Rotation Construction Method in China, 323

Contractor Key Competitiveness Indicators: A China Study, 329

- Determinants of International Architectural, Engineering, and Construction Firms' Project Success in China, 309

Determination of Sustainable Yield in Urban Groundwater Systems, Beijing, China, 1072

Disaster Recovery System Model with E-Government Case Study, 1937

Extending the Possibilities, 2034

- Partnering Mechanism in Construction: An Empirical Study on the Chinese Construction Industry, 310

Relationship between Housing Affordability and Economic Development in Mainland China — Case of Shanghai, 1779

Reservoir Storage Curve Estimation Based on Remote Sensing Data, 1087

## SUB

Strength  
For  
Stu

Sun,  
Utiliz  
Ma

196

Chlor  
Effect  
chlo  
196

Effect  
sion  
Co

Electr  
Im

Chlor  
Field  
nat

Inact  
Mi

MS2  
cal

Mult  
Co

Sin

Chlor  
Iron

By

Chlor  
ter

Evalu

Me

tion

Labe

Cl

Pre

us

Clai

Avo

Con

on

ol

D

"Is

W

E

Utili

tr

Class

Aut

M

Clas

U

Util

De

Clas

Eva

ic

## SUBJECT INDEX

## Clays

- Strengths, Weaknesses, Opportunities, and Threats for Foreign-Invested Construction Enterprises: A China Study, 384
- Sun, Moon, and Stars, 2006
- Utilization of Trenchless Construction Methods in Mainland China to Sustain Urban Infrastructure, 1984
- Chlorides**
- Effect of Chloride Ions on the Dechlorination of Hexachlorobenzene in the Presence of Zero-Valent Iron, 1965
- Effect of Fiber-Reinforced Polymer Wraps on Corrosion Activity and Concrete Cracking in Chloride-Contaminated Concrete Cylinders, 202
- Electrolytic Treatment of Azo Dye Wastewaters: Impact of Matrix Chloride Content, 656
- Chlorination**
- Field Investigation at a Chlorinated Ethylene Contaminated Site, 1963
- Inactivation Kinetics of the Cyanobacterial Toxin Microcystin-LR by Free Chlorine, 692
- MS2 Inactivation by Chloride-Assisted Electrochemical Disinfection, 584
- Multiyear Temporal Changes in Chlorinated Solvent Concentrations at 23 Monitored Natural Attenuation Sites, 672
- Chlorine**
- Iron Oxide Enhanced Chlorine Decay and Disinfection By-Product Formation, 767
- Chromium**
- Bio reduction of Hexavalent Chromium in Flow-Through Quartz Sand Columns, 623
- Chromium Redox Chemistry in Drinking Water Systems, 694
- Evaluating an Electrokinetically Driven Extraction Method for Measuring Heavy Metal Soil Contamination, 641
- Laboratory-Scale Evaluation of Cr(VI) Removal from Clay by Electrokinetics Incorporated with Fe(O) Barrier, 1959
- Precipitative Removal of As, Ba, B, Cr, Sr, and V using Sodium Carbonate, 653
- Claims**
- Avoiding and Minimizing Construction Delay Claim Disputes in Relational Contracting, 1421
- Contractual Management in PPP Projects: Evaluation of Legal versus Relational Contracting for Service Delivery, 1415
- "Is That Not Horrific?" — or "You Have Been Warned!" *Burchell v. Bullard* and Implications for English Construction Law, 1428
- Utilizing Dispute Review Boards in Relational Contracting: A Case Study, 1436
- Classification**
- Automatic Speed Calibration Methodology for Traffic Monitoring Sites, 1666
- Classifying Construction Contractors Using Unsupervised-Learning Neural Networks, 411
- Utilizing Clustering Techniques in Estimating Traffic Data Input for Pavement Design, 1759
- Clay liners**
- Evaluating the Long-Term Performance of Geosynthetic Clay Liners Exposed to Freeze-Thaw, 804
- Clays**
- Bearing Capacity of Piles Rafts on Soft Clay Soils, 927
- Behavior of One-Dimensional Consolidation under Time-Dependent Loading, 480
- Comparison in Undrained Shear Strength between Undisturbed and Remolded Ariake Clays, 806
- Comparison of Methods for Determining Specific Surface Area of Soils, 865
- Confirmation of Aqueous Polymer Sorption on Contaminant Barrier Clay using TGA, 1293
- Coupled Heat-Deformation-Flow Analysis for Clayey Soil, 826
- Coupled Mechanical and Chemical Behavior of Bentonite Engineered with a Controlled Organic Phase, 907
- Drag Force on Single Piles in Clay Subjected to Surcharge Loading, 20
- Drained and Undrained Strength Interpretation for Low-Plasticity Silts, 802
- Effect of Penetration Rate on Penetrometer Resistance in Clay, 887
- Effect of Wet — Dry Cycles and Cation Exchange on Gas Permeability of Geosynthetic Clay Liners, 871
- Experimental Evaluation of Engineering Behavior of Soft Bangkok Clay under Elevated Temperature, 862
- Finite-Element Parametric Study of the Consolidation Behavior of a Trial Embankment on Soft Clay, 45
- Fundamental Characteristics of Cement-Admixed Clay in Deep Mixing, 1279
- Ground Movement Predictions for Braced Excavations in Undrained Clay, 821
- How Reliable is the Plasticity Index for Estimating the Liquefaction Potential of Clayey Sands?, 790
- Hydraulic Conductivity of Soil Sorpive Zones Created by In Situ Injection of a Cationic Surfactant, 773
- Impact of Particle Aggregated Microbes on UV Disinfection: I: Evaluation of Spore — Clay Aggregates and Suspended Spores, 666
- Interpretation of Impact Penetration Measurements in Soft Clays, 848
- Laboratory Evaluation of Smear Zone and Correlation between Permeability and Moisture Content, 867
- Laboratory Simulation of Field Sampling: Comparison with Ideal Sampling and Field Data, 810
- Laboratory-Scale Evaluation of Cr(VI) Removal from Clay by Electrokinetics Incorporated with Fe(O) Barrier, 1959
- Liquefaction Susceptibility Criteria for Silts and Clays, 908
- Numerical Analysis of T-Bar Penetration in Soft Clay, 53
- Online Earthquake Response Test for Stratified Layers of Clay and Sand, 834
- Parametric Study of One-Dimensional Solute Transport in Deformable Porous Media, 870
- Physical Response of Geomembrane Wrinkles Overlying Compacted Clay, 902
- Physico-Chemical Changes in Clay Caused by Ion Migration from Lime Piles, 1281
- Pile Behavior due to Excavation-Induced Soil Movement in Clay. I: Stable Wall, 780
- Pile Behavior Due to Excavation-Induced Soil Movement in Clay. II: Collapsed Wall, 781
- Practical Model of Frost Heave in Clay, 786
- Predictive Model for the Water Retention Curve of Deformable Clayey Soils, 881

- Removal of Lead from Contaminated Water and Clay Soil using a Biosurfactant, 687
- Single Hardening Elasto-Plastic Model for Kaolin Clay with Loading-History-Dependent Plastic Potential Function, 17
- Small-Strain Shear Moduli of Chemically Stabilized Sulfate-Bearing Cohesive Soils, 808
- Solidification of New Zealand Harbor Sediments using Cementitious Materials, 1294
- Strain Localization in Combined Axial-Torsional Testing on Kaolin Clay, 489
- Stress Path Testing of Realistically Cured Lime and Lime/Cement Stabilized Clay, 1288
- Thermochemical Analysis in the Presintering Phase of Aggregates from Sludge-Marine Clay Mixes, 1267
- Threshold Shear Strain for Cyclic Pore-Water Pressure in Cohesive Soils, 900
- Using Crushed Clay Brick as Coarse Aggregate in Concrete, 1319
- Climatic changes**
- Climate Model Simulation of Point Rainfall Frequency Characteristics, 1127
- Increased Snow Loads and Wind Actions on Existing Buildings: Reliability of the Norwegian Building Stock, 1618
- Modeling of Lake Ice Characteristics in North America using Climate, Geography, and Lake Bathymetry, 187
- Safety Climate in Construction Industry: A Case Study in Hong Kong, 345
- Sensitivity Analyses and Sensitivity Coefficients of Standardized Daily ASCE-Pennman-Monteith Equation, 1228
- Updating Rainfall IDF Relationships to Maintain Urban Drainage Design Standards, 1123
- Climatic data**
- Modeling of Lake Ice Characteristics in North America using Climate, Geography, and Lake Bathymetry, 187
- Climatology**
- Frequency Distributions of Heavy Snowfall from Snowstorms in the United States, 1114
- Spatial Uncertainty Modeling of Climate Processes for Extreme Hydrogeomorphological Events Hazard Monitoring, 758
- Clogging**
- Design of Street Curb Opening Inlets using a Decay-Based Clogging Factor, 1057
- Methodological Aspects of using Blast Furnace Slag for Wastewater Phosphorus Removal, 746
- Stress-Controlled Filtration with Compressible Particles, 858
- Closed form solutions**
- Closed-Form Stiffness Matrix for the Four-Node Quadrilateral Element with a Fully Populated Material Stiffness, 581
- Exact Solution of Out-of-Plane Problems of an Arch with Varying Curvature and Cross Section, 494
- Improved Compartmental Modeling and Application to Three-Phase Contaminant Transport in Unsaturated Porous Media, 606
- Nonlinear Analytical Solution for Cable Truss, 446
- Postbuckling of Beam Subjected to Intermediate Follower Force, 436
- Cloud seeding**
- Guidelines for Cloud Seeding to Augment Precipitation, 2073
- Coagulation**
- Charge Reversal Effect on Blanket in Full-Scale Floc Blanket Clarifier, 756
- Electrocoagulation of Silica Nanoparticles in Wafer Polishing Wastewater by a Multichannel Flow Reactor: A Kinetic Study, 772
- Fundamentals of Bubble Formation during Coagulation and Sedimentation Processes, 664
- Heavy Metals Removal from Acidic and Saline Soil Leachate using Either Electrochemical Coagulation or Chemical Precipitation, 660
- Quantitative Model of Coagulation with Inorganic Polymer Flocculant PACI: Application of the PCNM, 647
- Coarse-grained soils**
- Three-Dimensional Pavement Analysis with Nonlinear Subgrade Materials, 1321
- Coastal engineering**
- Coastal Dynamics 2005 -- State of the Practice, 2055
- Estuarine and Coastal Modeling — Proceedings of the Ninth International Conference, 2064
- Explicit Expression for Beach Response to Non-Stationary Forcing near a Groynes, 1867
- Offshore Technology in Civil Engineering: Hall of Fame Papers from the Early Years, 2077
- Prediction of Long Forcing Waves for Harbor Agitation Studies, 1871
- Coastal environment**
- Chebyshev Finite-Spectral Method for 1D Boussinesq-Type Equations, 1876
- Considerations for Storm-Water Outfalls off Exposed Coasts, 1233
- Explicit Formulation of the Shields Diagram for Incipient Motion of Sediment, 1041
- Large Wind Missile Impact Capacity of Residential and Light Commercial Buildings, 1990
- Optimization of Frequency Distribution of Storm-Water Discharges for Coastal Ecosystem Restoration, 1835
- Real Estate Market Response to Coastal Flood Hazards, 1936
- Stage-Discharge Relations for Low-Gradient Tidal Streams using Data-Driven Models, 979
- Three-Dimensional Modeling of the Ruwais Coastal Area of United Arab Emirates, 1902
- Coastal management**
- The Gulf of Mexico Decommissioning Market, 369
- Model for Environmental Risk Assessment of Tourism Project Construction on the Egyptian Red Sea Coast, 729
- Coastal morphology**
- Development and Validation of a Quasi-Three-Dimensional Coastal Area Morphological Model, 1900
- Explicit Expression for Beach Response to Non-Stationary Forcing near a Groynes, 1867
- Coastal processes**
- Development and Validation of a Quasi-Three-Dimensional Coastal Area Morphological Model, 1900

## SUBJECT INDEX

## Cold-formed steel

- Explicit Expression for Beach Response to Non-Stationary Forcing near a Groyne, 1867
- Coastal structures**
- Coastal Dynamics 2005 -- State of the Practice, 2055
- Explicit Expression for Beach Response to Non-Stationary Forcing near a Groyne, 1867
- Fluid-Soil-Structure Interaction in Liquefaction around a Cyclically Moving Cylinder, 1882
- Lessons from Katrina, 2009
- Recent Progress in the Modeling of Corrosion of Structural Steel Immersed in Seawaters, 1152
- Coating**
- Effective Moduli of Coated Particulate Composites with BCC Structure at High Concentration, 525
- Simulation of Lead Ions Adsorption onto the Iron-Coated Medium: Dependent on Temperature and pH, 1942
- Codes**
- Comparison of Roles of FRP Sheets, Stirrups, and Steel Fibers in Confining Bond Critical Regions, 222
- Critical Review of Deflection Formulas for FRP-RC Members, 206
- Frequency Analysis of Ground Snow Data and Production of the Snow Load Map using Geographic Information System for the Eastern Black Sea Region of Turkey, 1553
- Live-Load Distribution Factors for Prestressed Concrete, Spread Box-Girder Bridge, 160
- Reliability, Brittleness, Covert Understrength Factors, and Fringe Formulas in Concrete Design Codes, 1439
- Coefficients**
- Broad-Crested Weirs with Rectangular Compound Cross Sections, 1193
- Effectiveness of Bermuda Grass as Vegetative Cover in Grassed Waterway: A Simulated Study, 1196
- Estimation of Evapotranspiration of Different-Sized Navel-Orange Tree Orchards using Energy Balance, 1164
- Evaluation of Dispersion Coefficients in Meandering Channels from Transient Tracer Tests, 1033
- Evaluation of Oxygen Sag Equation for Second-Order Biochemical Oxygen Demand Decay, 766
- Flood Estimation by GIUH-Based Clark and Nash Models, 1124
- Functional Relationships of Resistance in Wide Flood Plains with Rigid Unsubmerged Vegetation, 948
- Galerkin Solution for Linear Stochastic Algebraic Equations, 570
- Hydraulic Performance Curves for Highway Culverts, 978
- Measured and Predicted Herbicide Removal by Mulch, 702
- Minimum Specific Energy and Critical Flow Conditions in Open Channels, 1221
- Nodal Point Relation for the Distribution of Sediments at Channel Bifurcation, 1043
- Peak Wind Load Comparison: Theoretical Estimates and ASCE 7, 1551
- Performance of Slit Weir, 1029
- Sensitivity Analyses and Sensitivity Coefficients of Standardized Daily ASCE-Penman-Monteith Equation, 1228
- Structural Damage Detection from Wavelet Coefficient Sensitivity with Model Errors, 547
- Cofferdams**
- CFRP Repair and Strengthening of Structurally Deficient Piles: Design Issues and Field Application, 191
- Cohesionless sediment**
- Laboratory Measurements of Bed Load Sediment Transport Dynamics, 1875
- Lateral Variations in Suspended Sediment Concentration over Dunes, 1066
- Cohesionless soils**
- Predicting End Bearing Capacity of Post-Grouted Drilled Shaft in Cohesionless Soils, 822
- Small-Strain Behavior of Granular Soils. II: Seismic Response Analyses and Model Evaluation, 877
- Cohesive sediment**
- Computational Fluid Dynamics Analysis of Flow in a Straight Flume for Sediment Erodibility Testing, 1899
- Data Interpretation for In Situ Measurements of Cohesive Sediment Erosion, 990
- Guidelines for Pipeline On-Bottom Stability on Liquefied Noncohesive Seabeds, 1883
- Cohesive soils**
- Stochastic Flow Analysis for Predicting River Scour of Cohesive Soils, 980
- Threshold Shear Strain for Cyclic Pore-Water Pressure in Cohesive Soils, 900
- Cold regions**
- Cold Regions Engineering 2006 — Current Practices in Cold Regions Engineering, 2056
- Cold weather construction**
- Numerical Modeling of Thaw Penetration in Frozen Ground Subject to Low-Intensity Infrared Heating, 180
- Response of Air-Entrained Concrete to Severe Chemical Aggression, 1262
- Cold-formed steel**
- Bearing Strength of Slabs on Grade Supporting a Cold-Formed Steel Wall in Low-Rise Building, 87
- Behavior of Complex Hat Shapes used as Truss Chord Members, 1501
- Cold-Formed Stainless Steel Sections Subjected to Web Crippling, 1451
- Cold-Formed Steel Frame Shear Walls Utilizing Structural Adhesives, 1497
- Complex Edge Stiffeners for Thin-Walled Members, 1459
- Design Criteria for Seam and Sheet-to-Framing Connections of Cold-Formed Steel Shear Panels, 1496
- Distortion Buckling of Cold-Formed Stainless Steel Sections: Experimental Investigation, 1488
- Distortion Buckling of Cold-Formed Stainless Steel Sections: Finite-Element Modeling and Design, 1489
- Distortion Buckling of Cold-Formed Steel Members, 1503
- Experimental Capacity Assessment of Cold-Formed Boxed Stud and C Stud Wall Systems used in Australian Residential Construction, 1502
- Experiments of Cold-Formed Steel Connections and Portal Frames, 1498
- Finite-Element Simulation and Design of Cold-Formed Steel Channels Subjected to Web Crippling, 1633

## Cold-formed steel

- Full-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1500  
Local-Plate and Distortional Postbuckling Behavior of Cold-Formed Steel Lipped Channel Columns with Intermediated Stiffeners, 1491  
Predicting the Shear Strength of Mechanical Clinching in Cold-Formed Steel Structures, 1308  
Seismic Behavior of Sheathed Cold-Formed Structures: Numerical Study, 1494  
Seismic Behavior of Sheathed Cold-Formed Structures: Physical Tests, 1495  
Small-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1499  
Strength and Behavior of Cold-Formed Steel Z-Sections Subjected to Major Axis Bending, 1600  
Strength and Stiffness of Conventional Bridging Systems for Cold-Formed Cee Studs, 1493

## Collapse

- An Avoidable Tragedy, 2039  
Behavior and Design of Commercial Multistory Buildings Subjected to Blast, 1398  
Collapse during Construction of a Precast Girder Bridge, 1375  
Collapse of the Quebec Bridge, 1907, 1373  
Comparison of Various Procedures for Progressive Collapse Analysis, 1402  
Design Analysis for Buckling of Tanks and Silos, 1443  
Effects of Ground Motion Parameters and Cyclic Degradation Behavior on Collapse Response of Steel Moment-Resisting Frames, 1592  
Energy Capacity Criterion for the Design of Columns against Collapse, 493  
Global System Considerations for Progressive Collapse with Extensions to Other Natural and Man-Made Hazards, 1406  
Lagrangian Approach to Structural Collapse Simulation, 516  
Modeling the Impact of Failed Members for Progressive Collapse Analysis of Frame Structures, 1403  
The Most Degrading Postbuckling Mode of Pin-Jointed Structures, 513  
Murrah Building Bombing Revisited: A Qualitative Assessment of Blast Damage and Collapse Patterns, 1399  
Practical Means for Energy-Based Analyses of Disproportionate Collapse Potential, 1400  
Preventing Disproportionate Collapse, 1396  
Progressive Collapse — An Implosion Contractor's Stock in Trade, 1405  
Progressive Collapse of Structures: Annotated Bibliography and Comparison of Codes and Standards, 1407  
Static Equivalency in Progressive Collapse Alternate Path Analysis: Reducing Conservatism While Retaining Structural Integrity, 1401  
Study of Mitigation Strategies for Progressive Collapse of a Reinforced Concrete Commercial Building, 1404

## Collisions

- Vehicle Collision with Bridge Piers, 1

## Colloids

- Electrocoagulation of Silica Nanoparticles in Wafer Polishing Wastewater by a Multichannel Flow Reactor: A Kinetic Study, 772  
Electrokinetic Nanoparticle Treatment of Hardened Cement Paste for Reduction of Permeability, 1323

## 2006 ASCE TRANSACTIONS

- Transport of Edible Oil Emulsions in Clayey Sands: One-Dimensional Column Results and Model Development, 1095

## Colombia

- Transportation System Sustainability Issues in High-, Middle-, and Low-Income Economies: Case Studies from Georgia (U.S.), South Korea, Colombia, and Ghana, 1793

## Color

- Applicability of Equilibrium Isotherm Models for the Biosorptive Uptakes in Comparison to Activated Carbon-Based Adsorption, 764

- Electrolytic Treatment of Azo Dye Wastewaters: Impact of Matrix Chloride Content, 656

- Evaluation of Decolorization, Mineralization, and Toxicity Reduction of an Azo Dye C.I. Reactive Black 5 in a Counter-current Bubble Column by Ozone, 1940

## Colorado

- Braced for the Future, 2040

- Evaluating Regional Solutions to Salinization and Waterlogging in an Irrigated River Valley, 1166

- GEO-Volution: The Evolution of Colorado's Geological and Geotechnical Engineering Practice, 2070

- High-Volume Fly Ash Concrete: Analysis and Application, 1976

- Impact of Politics on the Colorado River Basin Water Agreement: In-Depth Administrative Analysis, 1911

- Integrated Economic, Hydrologic, and Institutional Analysis of Policy Responses to Mitigate Drought Impacts in Rio Grande Basin, 1851

- Probability-Based Bridge Network Performance Evaluation, 167

- Quenching Thornton's Thirst, 2043

## Colorado River

- GIS Visualization and Analysis of River Operations Impacts on Endangered Species Habitat, 1816

- Impact of Politics on the Colorado River Basin Water Agreement: In-Depth Administrative Analysis, 1911

- Modeling Uncertainty in an Object-Oriented Reservoir Operations Model, 1176

- Modified K-NN Model for Stochastic Streamflow Simulation, 1110

## Columns

- Biodegradation of Tetrachloroethene by Chitin Fermentation Products in a Continuous Flow Column System, 673

- Bioreduction of Hexavalent Chromium in Flow-Through Quartz Sand Columns, 623

- Buckling of GFRP Columns: An Empirical Approach to Design, 242

- Design of Circular Base Plates, 1970

- Development of a Field Design for In Situ Gaseous Treatment of Sediment Based on Laboratory Column Test Data, 769

- Energy Capacity Criterion for the Design of Columns against Collapse, 493

- Experimental Evaluation of Reduced Beam Section Connections to Deep Columns, 1473

- Improved STrength Model for Interior Flat Plate-Column Connections Subject to Unbalanced Moment, 1509

- Interaction Diagram and Load Effects for Vertical Pile Groups with Application to the AASHTO LRFD, 1484

## SUBJECT INDEX

- Nonlinear *EI* Equation for Slender Composite Columns Bending about the Minor Axis, 1596
- Numerical Simulation of High-Strength Steel Box-Shaped Columns Failing in Local and Overall Buckling Modes, 1492
- Postbuckling of Elastic Columns with Second-Mode Imperfection, 527
- Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. I: Theory, 1515
- Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. II: Applications, 1516
- Seismic Behavior of High-Strength Concrete Columns Confined by Fiber-Reinforced Polymer Tubes, 243
- Seismic Behavior of Reduced Beam Section Moment Connections to Deep Columns, 1474
- Shear-Flexural Buckling of Cantilever Columns under Uniformly Distributed Load, 557
- Strength and Stiffness of Conventional Bridging Systems for Cold-Formed Cee Studs, 1493
- Strengthening of Reinforced Concrete Bridge Columns with FRP Wrap, 1991
- Tests and Design of Aluminum Alloy Compression Members, 1546
- Visualizing Search and Solution Spaces in the Optimum Design of Biaxial Columns, 254
- Combined sewer overflow**
- Case Study: Refinement of Hydraulic Operation of a Complex CSO Storage/Treatment Facility by Numerical and Physical Modeling, 944
- Combined sewers**
- Increasing Stormwater Outfall Duration, Magnitude, and Volume through Combined Sewer Separation, 1119
- Combined stress**
- Degradation of Sands due to Combined Sinusoidal Loading, 930
- Failure Behavior of Spruce Wood under Bending-Shear Combined Stress Field, 1271
- Modified Skew Bending Model for Segmental Bridge with Unbonded Tendons, 109
- Combustion**
- Effect of Pressure Fluctuations on the Quality of Fluidization and on the Generation of Particulate Matters during Incineration, 708
- Emission of Polycyclic Aromatic Hydrocarbons on the Combustion of Liquid Crystal Display Components, 716
- Field Evaluation of a Leachate Collection System Constructed with Scrap Tires, 869
- Communication**
- Approaches to Improving the Quality of Construction Drawings from Owner's Perspective, 405
- Disaster Recovery System Model with E-Government Case Study, 1937
- Experimental Assessment of Wireless Construction Technologies, 388
- Investigation of Critical Success Factors in Construction Project Briefing by Way of Content Analysis, 404
- Use of a WBS Matrix to Improve Interface Management in Projects, 294
- Competitor**
- CBD Oriented Commuters' Mode and Residential Location Choices in an Urban Area with Surface Streets and Rail Transit Lines, 1799
- Compacted soils**
- Design of Compacted Lateritic Soil Liners and Covers, 798
- Field Performance of a Compacted Clay Landfill Final Cover at a Humid Site, 906
- Optimal Design of a Compacted Soil Liner Containing SO<sub>3</sub>Prite Amendments, 686
- Compaction**
- Cracking Tendency of Self-Compacting Concrete Subjected to Restrained Shrinkage: Experimental Study and Modeling, 1266
- Evaluation of Viscosity Values for Mixing and Compaction Temperatures, 1322
- High-Strength Self-Compacting Concrete Exposed to Fire Test, 1349
- Influence of Compactive Efforts on Lime-Slag Treated Tropical Black Clay, 1280
- Investigations on the Static Behavior of Self-Compacting Concrete Under-Reamed Piles, 1305
- Comparative studies**
- Comparative Absorption of Crude Oil from Fresh and Marine Water using Recycled Rubber, 723
- Comparative Analysis of Data-Driven and GIS-Based Conceptual Rainfall-Runoff Model, 1070
- Comparative Analysis of Water Vulnerability Assessment Methodologies, 1146
- Comparative Study of Different Subbase Materials, 1326
- Comparative Study of Fatigue Provisions for the AASHTO Fatigue Guide Specifications and LRFR Manual for Evaluation, 169
- Comparison in Undrained Shear Strength between Undisturbed and Remolded Ariake Clays, 806
- Comparison of Methods for Determining Specific Surface Area of Soils, 865
- Comparison of Physical Sampling and Real-Time Monitoring Strategies for Designing a Contamination Warning System in a Drinking Water Distribution System, 1834
- Comparison of Roles of FRP Sheets, Stirrups, and Steel Fibers in Confining Bond Critical Regions, 222
- Comparison of Tests of a Nonlinear Structure using a Shake Table and the EFT Method, 1584
- Comparison of Two Model Concepts for Simulation of Nitrogen Removal at a Full-Scale Biological Nutrient Removal Pilot Plant, 636
- Comparison of Various Procedures for Progressive Collapse Analysis, 1402
- Minimizing Mass Transfer Effects in Granular Iron Batch Tests Using GEM Reactors, 776
- On the Comparison of Timoshenko and Shear Models in Beam Dynamics, 554
- Compensation**
- At a Crossroads — Is Value-based Compensation the Answer?, 1919
- Procurement Routes in Public Building and Construction Projects, 356
- Competition**
- Contractor Key Competitiveness Indicators: A China Study, 329

## Competition

- EDTA-Enhanced Washing for Remediation of Pb-and/or Zn-Contaminated Soils, 730
- Composite beams**
- Composite T-Beams using Reduced-Scale Rectangular FRP Tubes and Concrete Slabs, 205
- Dynamic Characteristics and Effective Stiffness Properties of Honeycomb Composite Sandwich Structures for Highway Bridge Applications, 203
- Effective Slab Width in Prestressed Twin-Girder Composite Decks, 1573
- Long-Term Behavior of Timber-Concrete Composite Beams. I: Finite Element Modeling and Validation, 1440
- Long-Term Behavior of Timber-Concrete Composite Beams. II: Numerical Analysis and Simplified Evaluation, 1441
- Partial Interaction Shear Flow Forces in Continuous Composite Steel-Concrete Beams, 1460
- Preflex Beams: A Method of Calculation of Creep and Shrinkage Effects, 108
- Composite materials**
- Characterization of a Pultruded FRP Sheet Pile for Waterfront Retaining Structures, 1333
- Concrete Beams Strengthened with Prestressed Near Surface Mounted CFRP, 194
- Construction, Inspection, and Maintenance of FRP Deck Panels, 245
- Damage Theory Based on Composite Mechanics, 561
- Debonding- and Fatigue-Related Strain Limits for Externally Bonded FRP, 197
- Effect of Early-Age Temperature Rise on the Stability of Rapid-Hardening Cement Fiber Composites, 1325
- Effect of Test Piece Size on Rheological Behavior of Wood Composites, 518
- Effective Medium Theories for Multicomponent Porelastic Composites, 486
- Effective Moduli of Coated Particulate Composites with BCC Structure at High Concentration, 525
- Elastic Buckling of Laminated Conical Shells Using a Hierarchical High-Fidelity Analysis Procedure, 575
- Elastic Constants Identification of Composite Materials using Single Angle-Ply Laminate, 560
- Electroelastic Response of a Laminated Composite Plate with Piezoelectric Sensors and Actuators, 526
- Failure Mechanisms and Deployment Accuracy of Elastic-Memory Composites, 75
- Fatigue Behavior of a Steel-Free FRP—Concrete Modular Bridge Deck System, 150
- FEA of Complex Bridge System with FRP Composite Deck, 196
- Flexural and Shear Strength of Composite Lintels in Glass-Fiber-Reinforced Gypsum Wall Construction, 1306
- Full-Scale Experimental Investigation of Repair of Reinforced Concrete Interstate Bridge using CFRP Materials, 138
- Internal Forces for Statically Indeterminate Structures having Different Moduli in Tension and Compression, 508
- Lodging Velocity for an Emergent Aquatic Plant in Open Channels, 1032
- Long-Term Durability of State Street Bridge on Interstate 80, 125
- Membrane-Based Forms for Innovative FRP Bridge Systems through Structural Optimization, 234

## 2006 ASCE TRANSACTIONS

- Modeling of Multilayer Composite Fabrics for Gas Turbine Engine Containment Systems, 62
- Modeling of Prestressed Concrete-Filled Circular Composite Tubes Subjected to Bending and Axial Loads, 1483
- Multiscale Nonlinear Framework for the Long-Term Behavior of Layered Composite Structures, 577
- Normalized Test for Prediction of Debonding Failure in Concrete Elements Strengthened with CFRP, 240
- Reliability-Based Optimization of Fiber-Reinforced Polymer Composite Bridge Deck Panels, 1626
- Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. I: Theory, 1515
- Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. II: Applications, 1516
- Selection of Carbon-Fiber-Reinforced Polymer Systems for Steelwork Upgrading, 1335
- Service-Stage Analysis of Curved Composite Steel-Concrete Bridge Beams, 1629
- Shear Resistance of FRP RC Beams: Experimental Study, 235
- Shear Response of Concrete-Filled FRP Composite, 1533
- A Stochastic Transformation Field Theory for Heterogeneous Materials, 564
- Study of a Honeycomb-Type Rigidified Inflatable Structure for Housing, 1603
- System Identification of Partially Restrained Composite Plates using Measured Natural Frequencies, 521
- Testing, Analysis, and Evaluation of a GFRP Deck on Steel Girders, 142
- Upsetting Tests of Fresh Cementitious Composites for Extrusion, 450
- Use of Fiber-Reinforced Polymer Composite Elements to Enhance Structural Steel Member Ductility, 223
- Use of Inorganic Polymer to Improve the Fire Response of Balsa Sandwich Structures, 1303
- Wood Members Strengthened with Mechanically Fastened FRP Strips, 228
- Composite structures**
- Behavior of Reinforced Concrete Column—Steel Beam Roof Level T-Connections under Displacement Reversals, 1540
- Composite Construction in Steel and Concrete V, 2057
- Durability of FRP Composite Bridge Deck Materials under Freeze-Thaw and Low Temperature Conditions, 147
- Evaluation of Effective Width and Distribution Factors for GFRP Bridge Decks Supported on Steel Girders, 143
- Experimental In-Plane Behavior of Tuff Masonry Strengthened with Cementitious Matrix—Grid Composites, 210
- Multiscale Nonlinear Framework for the Long-Term Behavior of Layered Composite Structures, 577
- Nine-Node Resultant-Stress Shell Element for Free Vibration and Large Deflection of Composite Laminates, 69
- Nonlinear EI Equation for Slender Composite Columns Bending about the Minor Axis, 1596
- Nonlinear Equation for Flexural Stiffness of Slender Composite Columns in Major Axis Bending, 1477
- Seismic Upgrading of RC Buildings by FRP: Full-Scale Tests of a Real Structure, 1337
- Shear Response of Concrete-Filled FRP Composite, 1533

## SUBJECT INDEX

- Structural Behavior of FRP Composite Bridge Deck Panels, 141
- Composting**  
Bioremediation of Petroleum-Contaminated Soil using Composting, 1951
- Compressibility**  
Compressibility Moduli for Porous Materials Incorporating Volume Fraction, 562
- Experimental Study of Macro- and Microbehavior of Natural Diatomite, 833
- Fundamental Characteristics of Cement-Admixed Clay in Deep Mixing, 1279
- Relating Damping to Soil Permeability, 28
- Compression**  
"Giant Superalasticity Effect" in NiTi Superalastic Materials and Its Applications, 1360
- Hyperelasticity Model for Finite-Element Analysis of Natural and High Damping Rubbers in Compression and Shear, 440
- Influence of Functionally Graded Material on Buckling of Skew Plates under Mechanical Loads, 528
- Internal Forces for Statically Indeterminate Structures having Different Moduli in Tension and Comprehension, 508
- Limitations of FRP Jacking in Confining Old-Type Reinforced Concrete Members in Axial Compression, 190
- Mechanical Grading of Round Timber Beams, 1261
- Mechanics of Web Panel Postbuckling Behavior in Shear, 1595
- Particle Shape Effects on Packing Density, Stiffness, and Strength: Natural and Crushed Sands, 832
- Strengthening of Reinforced Concrete Bridge Columns with FRP Wrap, 1991
- Visualization of Crushing Evolution in Granular Materials under Compression using DEM, 32
- Compression tests**  
Experimental Evaluation of Compressive Behavior of Orthotropic Steel Plates for the New San Francisco — Oakland Bay Bridge, 118
- Shear Banding in Sandstone: Physical and Numerical Studies, 31
- Compressive strength**  
Application of Polymers to Textile-Reinforced Concrete, 1338
- Compaction Delay Effects on Properties of Lime-Treated Soil, 1287
- Development and Production of Ready-Mixed Soil Material, 1354
- Ecofriendly Concrete with High Volume of Lagoon Ash, 1310
- High-Carbon Fly Ash in Manufacturing Conductive CLSM and Concrete, 1347
- Influence of Compactive Efforts on Lime-Slag Treated Tropical Black Clay, 1280
- Modeling Compressive Strength Development in Florida Concrete, 1362
- Potential of Wood Waste Ash as an Additive in Concrete, 1330
- Prediction of Concrete Strength using Neural-Expert System, 1311
- Residual Stress Measurement of Welded Aluminum Light Pole Supports, 1597

## Computation

- Short and Medium Term Durability Evaluation of FRP-Confined Circular Concrete, 212
- Study of Effects of Natural Pozzolan on Properties of Cement Mortars, 1356
- Using UCS as a Surrogate Performance Standard at the NCSU NPL Site, 738
- Computation**  
17th Analysis and Computation Specialty Conference, 2044
- 3D Calculation of Stopping-Sight Distance from GPS Data, 1739
- Alternative Computation of Dean's Overfill Ratio, 1868
- Automatically Computing the Displacements and Stresses Induced by Three-Dimensional Arbitrarily Shaped Loads in a Transversely Isotropic Medium, 18
- Computation of Mixed-Mode Stress Intensity Factors for Cracks in Three-Dimensional Functionally Graded Solids, 435
- Critical Analysis of Computing Equations for Determination of BOD by Dilution Methods, 651
- Daniel W. Mead Prizes for Younger Members and Students: Ethically Understanding the Role of Computer Software in Engineering Calculation, 2002
- Design Provisions for Sections Containing Unstiffened Elements with Stress Gradient, 8
- Distributed Hybrid Genetic Algorithms for Structural Optimization on a PC Cluster, 1625
- Efficient Computation of Response Sensitivities for Inelastic Structures, 1464
- Finite-Element Computation of Wave-Structure Interaction between Steep Stokes Waves and Vertical Cylinders, 1886
- Flow Computation and Mass Balance in Galerkin Finite-Element Groundwater Models, 1054
- Groundwater Remediation Design using Multiscale Genetic Algorithms, 1837
- Interaction Diagram and Load Effects for Vertical Pile Groups with Application to the AASHTO LRFD, 1484
- Large-Eddy Simulation of Turbulent Flow over a Fixed Two-Dimensional Dune, 996
- Minimizing Construction-Related Hazards in Airport Expansion Projects, 344
- Multiphase/Multidomain Computations using Continuum and Lattice — Boltzmann Methods, 84
- Optimal Design of Redundant Water Distribution Networks using a Cluster of Workstations, 1840
- Optimizing Airport Construction Site Layouts to Minimize Wildlife Hazards, 1257
- Parallel Genetic Algorithms for Optimizing Resource Utilization in Large-Scale Construction Projects, 337
- Performance of Parallel Implementations of an Explicit Finite-Volume Shallow-Water Model, 255
- Potential Computational Benefits of Geometric, Kinematic, and Behavioral Downsampling of Microscopic Traffic Network Simulation, 277
- Refinement Indicator for Mesh Adaption in Shallow-Water Modeling, 1015
- Seismic Bearing Capacity of Shallow Strip Footings Embedded in Slope, 30
- Structural Damage Detection via Modal Data with Genetic Algorithms, 1586

## Computation

Turbulent Flow Friction Factor Calculation using a Mathematically Exact Alternative to the Colebrook — White Equation, 1017

Unstructured Grid Finite-Volume Algorithm for Shallow-Water Flow and Scalar Transport with Wetting and Drying, 968

Visualizing Search and Solution Spaces in the Optimum Design of Biaxial Columns, 254

### Computational fluid dynamics technique

Computational Fluid Dynamics Analysis of Flow in a Straight Flume for Sediment Erodibility Testing, 1899

Computational Fluid Dynamics Simulation of Concentration Distributions from a Point Source in the Urban Street Canyons, 67

Generic Design of V-Shape and Vane-Type Breakwaters to Reduce Green Water Load Effects on Deck Structures and Containers of Ships: Case Study, 1860

Modeling 3D Supercritical Flow with Extended Shallow-Water Approach, 1024

Real Local Losses Estimation for On-Line Emitters Using Empirical and Numerical Procedures, 1224

Three-Dimensional CFD Predictions and Experimental Comparison of Pressure Drop of Some Common Pipe Fittings in Turbulent Flow, 426

Transverse Pavement Grooving against Hydroplaning. I: Simulation Model, 1709

Transverse Pavement Grooving against Hydroplaning. II: Design, 1710

Validation of a Three-Dimensional Computational Fluid Dynamics Model of a Contact Tank, 1005

### Computer aided design

Computer Representation to Support Conceptual Structural Design within a Building Architectural Context, 253

Computer-Aided Site Layout Planning, 302

Membrane-Based Forms for Innovative FRP Bridge Systems through Structural Optimization, 234

Potential of Augmented Reality as an Assistant Viewer for Computer-Aided Drawing, 280

### Computer aided drafting (CAD)

Construction Scheduling and Progress Control using Geographical Information Systems, 285

Potential of Augmented Reality as an Assistant Viewer for Computer-Aided Drawing, 280

### Computer aided instruction

Educational Architecture-Oriented Software Linking Conceptual Design and Solar Intensity, 93

### Computer aided scheduling

MACROS: Multiobjective Automated Construction Resource Optimization System, 1252

Object-Oriented Scheduling for Repetitive Projects with Soft Logics, 291

Parallel Genetic Algorithms for Optimizing Resource Utilization in Large-Scale Construction Projects, 337

Work Continuity Constraints in Project Scheduling, 289

### Computer aided simulation

Application Framework for Mapping and Simulation of Waste Handling Processes in Construction, 408

Educational Architecture-Oriented Software Linking Conceptual Design and Solar Intensity, 93

## 2006 ASCE TRANSACTIONS

Effects of Traffic Characteristics and Mounting Location on the Visibility of On-Premise Commercial Signs, 1758

Implementing a B2B e-Work System to the Approval Process of Rebar Design and Estimation, 248

Issues and Solutions to Macroscopic Traffic Dispersion Modeling, 1723

Procedures for Calibrating TRANSYT Platoon Dispersion Model, 1722

Residential Construction Lot Grading Approval Process Optimization: Case Study of City of Edmonton, 409

### Computer analysis

Flow Computation and Mass Balance in Galerkin Finite-Element Groundwater Models, 1054

### Computer applications

Application of Web Services for Structural Engineering Systems, 260

Civil Engineering: A Changing Profession, 1918

Computerized System for Efficient Delivery of Infrastructure Maintenance/Repair Programs, 290

Conflict Resolution in Construction Disputes using the Graph Model, 391

Engineering with the Spreadsheet — Structural Engineering Templates Using Excel, 2063

GeoCongress 2006: Geotechnical Engineering in the Information Technology Age, 2068

Methodology for Usability Evaluation of Corporate Memory Design Reuse Systems, 274

Neural Networks for Estimating the Productivity of Concreting Activities, 353

Object-Oriented Scheduling for Repetitive Projects with Soft Logics, 291

ONDA: Computer Code for Nonlinear Seismic Response Analyses of Soil Deposits, 800

Research Publication Trends and Topics in Computing in Civil Engineering, 246

Transverse Analysis of Strutted Box Girder Bridges, 107

Web-Enabled System Dynamics Model for Error and Change Management on Concurrent Design and Construction Projects, 273

### Computer graphics

Application of Web Services for Structural Engineering Systems, 260

### Computer models

Adjusting Nodal Demands in SCADA Constrained Real-Time Water Distribution Network Models, 942

Assessing Performance under Regulatory Evolution: A European Transit System Perspective, 1798

Exploring the Bidding Situation for Economically Most Advantageous Tender Projects using a Bidding Game, 390

Hydrologic Modeling Inventory: Cooperative Research Effort, 1175

Lighting Requirements for Nighttime Highway Construction, 331

Model for Environmental Risk Assessment of Tourism Project Construction on the Egyptian Red Sea Coast, 729

Optimal Planning and Scheduling for Repetitive Construction Projects, 1238

Parallel Genetic Algorithms for Optimizing Resource Utilization in Large-Scale Construction Projects, 337

## SUBJECT INDEX

## Concrete

- Prediction of Soil-Water Characteristic Curve using Genetic Programming, 840
- Computer networks**  
Internet-Enabled Remote Observation and Control of a Shake Table Experiment, 271
- Computer programming**  
Alternative Formulations for Structural Optimization: An Evaluation Using Frames, 1624
- Development of an Industry Foundation Classes Assembly Viewer, 257
- Elevation-Dependent Management of the Edwards Aquifer: Linked Mathematical and Dynamic Programming Approach, 1836
- Irrigation Scheduling with Travel Times, 1188
- Linear Programming Approach to Optimize Strategic Investment in the Construction Workforce, 402
- Optimal Irrigation Planning under Water Scarcity, 1189
- Optimal Reservoir Operations for Irrigation using a Three Spatial Scales Approach, 1179
- Optimization of Water Distribution Networks using Integer Linear Programming, 981
- Prototype Tool for Mechanical, Electrical, and Plumbing Coordination, 249
- Real-Time Determination of Orthometric Heights Accurate to the Centimeter Level using a Single GPS Receiver: Case Study, 1640
- Sensor Placement in Water Networks: A Stochastic Programming Approach, 1820
- Sequential Hybrid Inverse Mapping for State-Specified Design of Frames, 1581
- Computer software**  
Analytical Procedures for Estimating Capacity of Freeway Weaving, Merge, and Diverge Sections, 1731
- Civil Engineering: A Changing Profession, 1918
- Daniel W. Mead Prizes for Younger Members and Students: Ethically Understanding the Role of Computer Software in Engineering Calculation, 2002
- Development of an Industry Foundation Classes Assembly Viewer, 257
- Educational Architecture-Oriented Software Linking Conceptual Design and Solar Intensity, 93
- Engineering with the Spreadsheet — Structural Engineering Templates Using Excel, 2063
- GPS Precise Point Positioning Software for Ground Control Point Establishment in Remote Sensing Applications, 1642
- HAZUS — Its Development and Its Future, 1926
- Improving Value Generation in the Design Process of Industrial Projects using CAVI, 1243
- Internet-Enabled Remote Observation and Control of a Shake Table Experiment, 271
- Methodology for Ranking the Elements of Water-Supply Networks, 1160
- Performance of Parallel Implementations of an Explicit Finite-Volume Shallow-Water Model, 255
- Stochastic Streamflow Simulation using SAMS-2003, 1177
- Three-Dimensional Modeling for Estimation of Hydraulic Retention Time in a Reservoir, 710
- Use of Fiber-Reinforced Polymer Composite Elements to Enhance Structural Steel Member Ductility, 223
- Computers**  
TCLP Heavy Metal Leaching of Personal Computer Components, 638
- Concentrated loads**  
Concentrically Loaded Circular Steel Plates Bearing on Plain Concrete, 1614
- Empirical Punching Shear Failure Theory for Oriented Strand Boards: Preliminary Study, 1487
- Transverse Analysis of Strutted Box Girder Bridges, 107
- Concentration**  
Evaluation of Dispersion Coefficients in Meandering Channels from Transient Tracer Tests, 1033
- Global Behaviors of a Round Buoyant Jet in a Countercurrent, 991
- Conceptual design**  
Computer Representation to Support Conceptual Structural Design within a Building Architectural Context, 253
- Midply Wood Shear Wall System: Concept and Performance in Static and Cyclic Testing, 1578
- Concrete**  
Analyses of Heated Concrete Spalling due to Restrained Thermal Dilation: Application to the "Chunnel" Fire, 552
- Analysis of Strength of Concrete using Design of Experiments and Neural Networks, 1329
- Analytical Stress — Strain Relationships for Concrete Confined by Steel Stirrups and/or FRP Jackets, 1577
- Area-Rated Rational Coefficients for Portland Cement Pervious Concrete Pavement, 1098
- Assessment of Localized Damage in Concrete under Compression using Acoustic Emission, 1296
- Behavior of Beam-Column Joints made of Sustainable Concrete under Cyclic Loading, 1336
- Bond Behavior of Near-Surface Mounted CFRP Laminate Strips under Monotonic and Cyclic Loading, 218
- Bond of CFRP Bars in Concrete: Experimental Study and Analytical Interpretation, 227
- Composite Construction in Steel and Concrete V, 2057
- Compression Field Modeling of Confined Concrete: Constitutive Models, 1318
- Concentrically Loaded Circular Steel Plates Bearing on Plain Concrete, 1614
- Cracking Tendency of Self-Compacting Concrete Subjected to Restrained Shrinkage: Experimental Study and Modeling, 1266
- Creep Buckling of Shallow Parabolic Concrete Arches, 1601
- Damage Theory Based on Composite Mechanics, 561
- Design Factors Affecting the Flow of Water through Below-Ground Concrete Vaults, 737
- Determining the Tensile Stress-Crack Opening Curve of Concrete by Inverse Analysis, 449
- Effect of Contact Pressure on Bond Strength of Fiber-Reinforced Polymer to Concrete, 215
- Effect of Fiber-Reinforced Polymer Wraps on Corrosion Activity and Concrete Cracking in Chloride-Contaminated Concrete Cylinders, 202
- Effects of Silica Fume and Rice Husk Ash on the Properties of Heavyweight Concrete, 1301
- Electrokinetic Nanoparticle Treatment of Hardened Cement Paste for Reduction of Permeability, 1323
- Experimental Evaluation of Posttensioned Hybrid Coupled Wall Subassemblies, 1538
- Exploring Concrete Slump Model using Artificial Neural Networks, 266

## Concrete

- Flexural Behavior of Hybrid FRP-Concrete-Steel Double-Skin Tubular Members, 233  
High-Carbon Fly Ash in Manufacturing Conductive CLSM and Concrete, 1347  
Improved Image Analysis for Evaluating Concrete Damage, 265  
Investigation of Longitudinal Forces in a Concrete Railroad Trestle, 165  
Measuring System for Cracks in Concrete using Multitemporal Images, 1651  
Modeling Compressive Strength Development in Florida Concrete, 1362  
Moment Capacities and Deflection Limits of PFRP Sheet Piles, 241  
Neural Networks for Estimating the Productivity of Concreting Activities, 353  
Nondestructive Dynamic Evaluation of a Concrete Reaction Wall—Numerical and Experimental Studies, 1389  
Overture to Omaha, 2024  
Partial Interaction Shear Flow Forces in Continuous Composite Steel-Concrete Beams, 1460  
Performance of a Penetrating Corrosion Inhibitor in Concrete Affected by Carbonation-Induced Corrosion, 1359  
Potential of Wood Waste Ash as an Additive in Concrete, 1330  
Predicting Residual Strength in Unsaturated Concrete Exposed to Sulfate Attack, 1298  
Prediction of Concrete Strength using Neural-Expert System, 1311  
Probabilistic Demand Models and Fragility Curves for Reinforced Concrete Frames, 1593  
Response of Air-Entrained Concrete to Severe Chemical Aggression, 1262  
Role of an Amorphous Silica in Portland Cement Concrete, 1348  
Safety Assessment of Concrete Tunnel Linings under Fire Load, 1534  
Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. I: Theory, 1515  
Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. II: Applications, 1516  
Seismic Design and Analytical Modeling of Posttensioned Hybrid Coupled Wall Subassemblies, 1539  
Size Effect on Strength of Quasi-Brittle Structures with Reentrant Corners Symmetrically Loaded in Tension, 558  
Size Effects and the Dynamic Response of Plain Concrete, 1315  
Static and Cyclic Racking Performance of Autoclaved Aerated Concrete Cladding Panels, 86  
Study on the Average Fracture Energy for Crack Propagation in Concrete, 1357  
Toward a Physical Damage Variable for Concrete, 512  
Using Crushed Clay Brick as Coarse Aggregate in Concrete, 1319  
Verifications of Design Equations of Beams Externally Strengthened with FRP Composites, 213  
Water Transport in Concrete Damaged by Tensile Loading and Freeze-Thaw Cycling, 1307
- Concrete aggregates**  
Distribution Deviation of Large Aggregates from Uniformity in Waste Containment Concrete. I: Quantitative Model Formulation, 1268

## 2006 ASCE TRANSACTIONS

- Distribution Deviation of Large Aggregates from Uniformity in Waste Containment Concrete. II: Experimental Results and Quality Assurance, 1269  
**Concrete beams**  
Chemomechanical Assessment of Beams Damaged by Alkali-Silica Reaction, 1317  
Concrete Beams Strengthened with Prestressed Near Surface Mounted CFRP, 194  
Critical Inclination of Compression Struts in Concrete Beams, 1508  
Cyclic Behavior of RC Beams Strengthened with Carbon Fiber Sheets Bonded by Inorganic Matrix, 1264  
Debonding- and Fatigue-Related Strain Limits for Externally Bonded FRP, 197  
Debonding Failures of RC Beams Strengthened with Near Surface Mounted CFRP Strips, 198  
Determination of Nonlinear Softening Behavior at FRP Composite/Concrete Interface, 484  
Effects of FRP-Concrete Interface Bond Properties on the Performance of RC Beams Strengthened in Flexure with Externally Bonded FRP Sheets, 1345  
Empirical Approach for Determining Ultimate FRP Strain in FRP-Strengthened Concrete Beams, 201  
Evaluation of Bending Strength of RC Beams Strengthened with FRP Sheets, 220  
Experimental Investigation on Torsional Behavior of Solid and Box-Section RC Beams Strengthened with CFRP using Photogrammetry, 221  
Flexural Fatigue Behavior of Reinforced Concrete Beams Strengthened with FRP Fabric and Precured Laminate Systems, 232  
Fundamental Frequency Testing of Reinforced Concrete Beams, 1384  
Long-Term Behavior of Timber-Concrete Composite Beams. II: Numerical Analysis and Simplified Evaluation, 1441  
Moment Redistribution in FRP and Steel-Plated Reinforced Concrete Beams, 200  
Peel and Shear Fracture Characterization of Debonding in FRP Plated Concrete Affected by Moisture, 192  
Performance in Fire of Small-Scale CFRP Strengthened Concrete Beams, 239  
Prediction Models for Debonding Failure Loads of Carbon Fiber Reinforced Polymer Retrofitted Reinforced Concrete Beams, 193  
Response Prediction of RC Beams Externally Bonded with Steel-Reinforced Polymers, 207  
Service-Stage Analysis of Curved Composite Steel-Concrete Bridge Beams, 1629  
Shear Resistance of FRP RC Beams: Experimental Study, 235  
System Identification and Damage Detection of a Prestressed Concrete Beam, 1606  
Tension Stiffening Model for Concrete Beams Reinforced with Steel and FRP Bars, 1363  
Tests on the Ductility of Reinforced Concrete Beams Retrofitted with FRP and Steel Near-Surface Mounted Plates, 199  
Three-Parameter Model for Debonding of FRP Plate from Concrete Substrate, 485
- Concrete columns**  
Circular Columns Confined with FRP: Experimental versus Predictions of Models and Guidelines, 189  
High-Strength Concrete Columns under Eccentric Load, 1541

## SUBJECT INDEX

## Concrete, reinforced

- Nonlinear Analysis of Reinforced Concrete Beam — Columns with Bond-Slip, 559  
Nonlinear Equation for Flexural Stiffness of Slender Composite Columns in Major Axis Bending, 1477  
Residual Performance of FRP-Retrofitted RC Columns after being Subjected to Cyclic Loading Damage, 219  
Seismic Performance of Concrete-Filled FRP Tube Columns for Bridge Substructure, 139  
Short and Medium Term Durability Evaluation of FRP-Confined Circular Concrete, 212  
Size and Relative Stiffness Effects on Compressive Failure of Concrete Columns Wrapped with Glass FRP, 1297  
Stress – Strain Behavior of Large-Scale Circular Columns Confined with FRP Composites, 1450
- Concrete construction**  
A Cautionary Tale, 1995  
Effect of Contact Pressure on Bond Strength of Fiber-Reinforced Polymer to Concrete, 215  
Empirical Evaluation of Structural Frame Performance Criteria: Realizing the Potential of Hybrid Concrete Construction, 316  
Moving a Reinforced-Concrete Building: Case Study, 299
- Concrete durability**  
Influence of Water on Alkali-Silica Reaction: Experimental Study and Numerical Simulations, 1328  
Macro- and Microstructural Investigations on Strength and Durability of Pumice Concrete at High Temperature, 1320  
Penetrating Sealants for Concrete Bridge Decks — Selection Procedure, 156
- Concrete masonry**  
Experimental In-Plane Shear Strength Investigation of Reinforced Concrete Masonry Walls, 1478  
Multilaminate Macromodel for Concrete Masonry: Formulation and Verification, 1635
- Concrete pavements**  
Accuracy of Ground-Penetrating Radar for Pavement-Layer Thickness Analysis, 1673  
Effect of Slab-Base Interaction on Measured Concrete Pavement Responses, 1707  
Evaluation of Pavement Curing Effectiveness and Curing Effects on Concrete Properties, 1302  
Finite-Element Modeling and Calibration of Temperature Prediction of Hydrating Portland Cement Concrete Pavements, 1295  
Investigation of Heaving at Holloman Air Force Base, New Mexico, 1370  
Lessons Learned on Jointed Concrete Pavement Rehabilitation Strategies in Texas, 1690  
Simple Model for Structural Evaluation of Asphalt Concrete Pavements at the Network Level, 1141  
Structural Evaluation of Cement Concrete Roads in Mumbai City, 1379
- Concrete piles**  
Data Reduction of Horizontal Load Full-Scale Tests on Bored Concrete Piles and Pile Groups, 847  
Investigations on the Static Behavior of Self-Compacting Concrete Under-reamed Piles, 1305  
Lateral Response Evaluation of Single Piles Using Inclinometer Data, 923
- Concrete, post-tensioned**  
Mechanical Model for Unbonded Seven-Wire Tendon with Single Broken Wire, 576
- Concrete, precast**  
Performance Assessment of a Precast-Concrete, Buried, Small Arch Bridge, 1390
- Concrete, prestressed**  
Analysis and Design Procedure for FRP-Strengthened Prestressed Concrete T-Girders Considering Strength and Fatigue, 231  
Behavior of Prestressed Concrete Strengthened with Various CFRP Systems Subjected to Fatigue Loading, 238  
CFRP Repair and Strengthening of Structurally Deficient Piles: Design Issues and Field Application, 191  
Influence of Electrochemical Chloride Extraction on the Performance of Prestressed Concrete under Dynamic Loading Conditions, 1355  
Less is More, 2008  
Mechanical Model for Unbonded Seven-Wire Tendon with Single Broken Wire, 576  
Numerical Model for the Analysis of Unbonded Prestressed Members, 1442  
System Identification and Damage Detection of a Prestressed Concrete Beam, 1606  
Theoretical Analysis of Transfer Lengths in Pretensioned Prestressed Concrete Members, 545  
Transverse Analysis of Strutted Box Girder Bridges, 107
- Concrete, reinforced**  
Application of Polymers to Textile-Reinforced Concrete, 1338  
Blast Assessment of Load-Bearing Reinforced Concrete Shear Walls, 1982  
CFRP Strengthening for Punching Shear of Interior Slab – Column Connections, 230  
Chemomechanical Assessment of Beams Damaged by Alkali-Silica Reaction, 1317  
Closed-Form Stiffness Matrix for the Four-Node Quadrilateral Element with a Fully Populated Material Stiffness, 581  
Critical Review of Deflection Formulas for FRP-RC Members, 206  
Cyclic Behavior of RC Beams Strengthened with Carbon Fiber Sheets Bonded by Inorganic Matrix, 1264  
Design Issues for Concrete Reinforced with Steel Fibers, Including Fibers Recovered from used Tires, 1339  
Erosive Wear of Hydraulic Concrete with Low Steel Fiber Content, 1065  
Evaluation of Bending Strength of RC Beams Strengthened with FRP Sheets, 220  
Experimental Investigation and Fracture Analysis of Debonding between Concrete and FRP Sheets, 530  
Experimental Investigation on Torsional Behavior of Solid and Box-Section RC Beams Strengthened with CFRP using Photogrammetry, 221  
Fatigue Analysis of RC Slabs and Repaired RC Slabs Based on Crack Bridging Degradation Concept, 1532  
Flexural Fatigue Behavior of Reinforced Concrete Beams Strengthened with FRP Fabric and Precured Laminate Systems, 232

- Flexural Load Testing of Concrete-Filled FRP Tubes with Longitudinal Steel and FRP Rebar, 204  
 Fundamental Frequency Testing of Reinforced Concrete Beams, 1384  
 Fuzzy Logic Based Condition Rating of Existing Reinforced Concrete Bridges, 1392  
 High-Cycle Fatigue of Diagonally Cracked Reinforced Concrete Bridge Girders: Field Tests, 173  
 Limitations of FRP Jacking in Confining Old-Type Reinforced Concrete Members in Axial Compression, 190  
 Murrah Building Bombing Revisited: A Qualitative Assessment of Blast Damage and Collapse Patterns, 1399  
 New Avenue of Achieving Ductility for Reinforced Concrete Members, 1587  
 Nondestructive Assessment of Reinforced Concrete Structures Based on Fractal Damage Characteristic Factors, 531  
 Nonlinear Finite-Element Analysis of a FRP-Strengthened Reinforced Concrete Bridge, 106  
 Performance in Fire of Small-Scale CFRP Strengthened Concrete Beams, 239  
 Posttensioned Anchorage Zone Enhancement with Fiber-Reinforced Concrete, 159  
 Response Prediction of RC Beams Externally Bonded with Steel-Reinforced Polymers, 207  
 Seismic Fragility Analysis of Structural Systems, 473  
 Shaking Table Test of a 1:20 Scale High-Rise Building with a Transfer Plate System, 1610  
 Size Effect on Shear Strength of Deep Beams: Investigating with Strut-and-Tie Model, 1507  
 Strain Rate Model for Dynamic Analysis of Reinforced Concrete Structures, 1576  
 Structural Response of Elements Combining Ultra-high-Performance Fiber-Reinforced Concretes and Reinforced Concrete, 1615  
 Strut-and-Tie Design Methodology for Three-Dimensional Reinforced Concrete Structures, 1531  
 Tensile Lap Splicing of Bundled CFRP Reinforcing Bars in Concrete, 217  
 Tests on the Ductility of Reinforced Concrete Beams Retrofitted with FRP and Steel Near-Surface Mounted Plates, 199  
 Unloading and Reloading Stress - Strain Model for Confined Concrete, 1449
- Concrete slabs**  
 CFRP Strengthening for Punching Shear of Interior Slab — Column Connections, 230  
 Composite T-Beams using Reduced-Scale Rectangular FRP Tubes and Concrete Slabs, 205  
 Evaluation of Early Strength Requirement of Concrete for Slab Replacement using Accelerated Pavement Testing, 1749  
 Improved Strength Model for Interior Flat Plate-Column Connections Subject to Unbalanced Moment, 1509  
 Influence of Toughness on the Apparent Cracking Load of Fiber-Reinforced Concrete Slabs, 1634  
 Multifunctional Hybrid GFRP/Steel Joint for Concrete Slab Structures, 244
- Concrete structures**  
 Behavior and Modeling of Fiber Reinforced Polymer-Confining Concrete, 9  
 Evaluation of Distress in Supports of Hyperbolic Paraboloid Shell, 1364
- Fracture Mechanics Method for Mode-I Interface Evaluation of FRP Bonded to Concrete Substrates, 1346  
 Lightweight Shotcrete Canoe: Use of Viscosity Modifying Admixtures and Acetone as Artificial Paste, 1300  
 Loss Estimation Analysis of Flat-Slab Structures, 1925  
 Moving a Reinforced-Concrete Building: Case Study, 299  
 Nondestructive Assessment of Reinforced Concrete Structures Based on Fractal Damage Characteristic Factors, 531  
 Nonlinear Stiffness Design Optimization of Tall Reinforced Concrete Buildings under Service Loads, 1536  
 Normalized Test for Prediction of Debonding Failure in Concrete Elements Strengthened with CFRP, 240  
 Probabilistic Service Life Assessment and Maintenance Planning of Concrete Structures, 1521  
 Reliability, Brittleness, Covert Understrength Factors, and Fringe Formulas in Concrete Design Codes, 1439  
 Residual Tensile Properties of GFRP Reinforcing Bars after Loading in Severe Environments, 226  
 Seismic Upgrading of RC Buildings by FRP: Full-Scale Tests of a Real Structure, 1337  
 Simple Phenomenological Model for Reinforcing Steel under Arbitrary Load, 1542  
 Strain Rate Model for Dynamic Analysis of Reinforced Concrete Structures, 1576  
 Strength of Two-Dimensional Nodal Zones in Strut-Tie Models, 1613  
 Study of Mitigation Strategies for Progressive Collapse of a Reinforced Concrete Commercial Building, 1404
- Concrete technology**  
 Effect of Mixture Consistency on Formwork Pressure Exerted by Highly Flowable Concrete, 1353
- Concrete tests**  
 Effect of Mixture Consistency on Formwork Pressure Exerted by Highly Flowable Concrete, 1353
- Conduits**  
 Dynamics of Air Flow in Sewer Conduit Headspace, 1009
- Cone penetration**  
 Normalizing the CPT for Overburden Stress, 812
- Cone penetration tests**  
 Analytical Investigation of Friction Sleeve Length Effects on Stratigraphic Interpretation, 13  
 Assessment of Variable Uncertainties for Reliability-Based Design of Foundations, 888  
 CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, 873  
 Electronic Nose — Membrane Interface Probe for Geoenvironmental Site Characterization, 882  
 Field Evaluation of Crushed Glass — Dredged Material Blends, 831  
 First-Order Reliability Method for Probabilistic Liquefaction Triggering Analysis using CPT, 809  
 Poore Pressure Response Following Undrained uCPT Sounding in a Dilating Soil, 915  
 Prediction of Soil Composition from CPT Data using General Regression Neural Network, 272  
 Resistance Factors for Use in Shallow Foundation LRFD, 889

## SUBJECT INDEX

### Confidence intervals

Statistical Considerations for Predicting Residual Value of Heavy Equipment, 359

### Configuration

- Coupled Building Control Considering the Effects of Building/Connector Configuration, 1524  
Formation Processes and Configuration of Channel-Flow Dominated Alluvial Deltas by Numerical Simulation, 1012  
Multiple Optimum Size/Shape/Topology Designs for Skeletal Structures using a Genetic Algorithm, 1552  
Thermomechanical Framework for the Constitutive Modeling of Asphalt Concrete, 15

### Confinement

- Behavior and Modeling of Fiber Reinforced Polymer-Confining Concrete, 9  
Circular Columns Confined with FRP: Experimental versus Predictions of Models and Guidelines, 189  
High-Strength Concrete Columns under Eccentric Load, 1541  
Limitations of FRP Jacking in Confining Old-Type Reinforced Concrete Members in Axial Compression, 190  
Seismic Behavior of High-Strength Concrete Columns Confined by Fiber-Reinforced Polymer Tubes, 243  
Selection of Physical and Geometrical Properties for the Confinement of Vibrations in Nonhomogeneous Beams, 72  
Short and Medium Term Durability Evaluation of FRP-Confining Circular Concrete, 212  
Size and Relative Stiffness Effects on Compressive Failure of Concrete Columns Wrapped with Glass FRP, 1297  
Strengthening of Reinforced Concrete Bridge Columns with FRP Wrap, 191  
Unloading and Reloading Stress – Strain Model for Confined Concrete, 1449

### Conflict

- Conflict Resolution in Construction Disputes using the Graph Model, 391  
Quantification of Costs for Dispute Resolution Procedures in the Construction Industry, 1429

### Connecticut

- Ambient Vibration Monitoring of a Highway Bridge Undergoing a Destructive Test, 163  
Development and Implementation of a Continuous Strain Monitoring System on a Multi-Girder Composite Steel Bridge, 179

### Connections

- Behavior and Design of Commercial Multistory Buildings Subjected to Blast, 1398  
Characterization of Unistrut Connection Method with Pultruded Fiber-Reinforced Polymer Channels, 1342  
Composite T-Beams using Reduced-Scale Rectangular FRP Tubes and Concrete Slabs, 205  
Effects of Connection Fractures on Global Behavior of Steel Moment Frames Subjected to Earthquakes, 1447  
Experimental Evaluation of Reduced Beam Section Connections to Deep Columns, 1473  
Experimental Stiffness and Seismic Response of Pallet-Type Steel Storage Rack Connectors, 1987  
Experimental Studies on Seismic Behavior of Steel Pile-to-Pile-Cap Connections, 119

### Conservation

- Experimental Study of Offset HSS Connections, 1511  
Experiments of Cold-Formed Steel Connections and Portal Frames, 1498  
Finite-Element Crash Test Simulation of New York Portable Concrete Barrier with I-Shaped Connector, 1481  
Full-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1500  
General Analytical Framework for Design of Flexible Reinforced Earth Structures, 909  
Improved Strength Model for Interior Flat Plate-Column Connections Subject to Unbalanced Moment, 1509  
Midply Wood Shear Wall System: Concept and Performance in Static and Cyclic Testing, 1578  
Partial Interaction Shear Flow Forces in Continuous Composite Steel-Concrete Beams, 1460  
Performance Implications of Imperfectly Plastic Material in Metallic Structures with Nonmetallic Reinforcement, 1461  
Pinned Connection Strength and Behavior, 1456  
Plastic and Lateral-Torsional Buckling Behavior of Single Cold-Formed Channels Connected Back-to-Back, 1559  
Predicting the Shear Strength of Mechanical Clinching in Cold-Formed Steel Structures, 1308  
Prediction of Ductile Fracture in Steel Connections using SMCS Criterion, 1455  
Reliability of Steel Dowelled Wood Connections Designed to ASCE 16-95, 1482  
Seismic Behavior of Reduced Beam Section Moment Connections to Deep Columns, 1474  
Seismic Evaluation of Steel Moment Frame Buildings Designed using Different R-Values, 1583  
Seismic Performance of Concrete-Filled FRP Tube Columns for Bridge Substructure, 139  
Small-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1499  
Strength and Stiffness of Conventional Bridging Systems for Cold-Formed Cee Studs, 1493  
Strengthening of Interior Slab — Column Connections using a Combination of FRP Sheets and Steel Bolts, 229  
Virtual Experiments for Welded Structural Steel Connections, 1983
- Connections, bolted**  
Finite Element Modeling of the Nonlinear Behavior of Bolted-T-Stub Connections, 1530
- Optimum Arm Geometry for Ductile Modular Connectors, 1510**
- Connections, semi-rigid**  
Experiments of Cold-Formed Steel Connections and Portal Frames, 1498
- Reversed-Cyclic Behavior of a Novel Heavy Timber Tube Connection, 1568**
- Connections, welded**  
Experimental Performance of Link-to-Column Connections in Eccentrically Braced Frames, 1557
- Conservation**  
Divergence Form for Bed Slope Source Term in Shallow Water Equations, 997  
Integrated Management of Irrigation and Urban Storm-Water Infiltration, 1839  
Sedimentation Engineering, 2084

## Conservation

System-Wide Data Quality Control of Inductance Loop Data using Nonlinear Optimization, 263

### Constitutive models

Analysis of Deep Moisture Barriers in Expansive Soils. I: Constitutive Model Formulation, 43

Compression Field Modeling of Confined Concrete: Constitutive Models, 1318

Constitutive Model for Rockfill Materials and Determination of Material Constants, 35

DSC Model for Soil and Interface Including Liquefaction and Prediction of Centrifuge Test, 799

Elastoplastic Damage Modeling in Unsaturated Rocks and Applications, 23

Elastoplastic Model for the Long-Term Behavior Modeling of Unbound Granular Materials in Flexible Pavements, 40

General Formulation of Two Kinematic Hardening Constitutive Models with a Smooth Elastoplastic Transition, 41

Homogenization Approach for the Limit Analysis of Out-of-Plane Loaded Masonry Walls, 1602

Liquefaction Resistance of Undisturbed and Reconstituted Samples of a Natural Coarse Sand from Undrained Cyclic Triaxial Tests, 797

New Stabilized Finite Element Method Embedded with a Cap Model for the Analysis of Granular Materials, 460

Novel Approach to Integration of Numerical Modeling and Field Observations for Deep Excavations, 872

Parameter Optimization and Sensitivity Analysis for Disturbed State Constitutive Model, 19

Rate-Type Model for Bituminous Mixtures and Its Application to Sand Asphalt, 497

Seismic Site Response for Near-Fault Forward Directivity Ground Motions, 928

Simple Phenomenological Model for Reinforcing Steel under Arbitrary Load, 1542

Single Hardening Elasto-Plastic Model for Kaolin Clay with Loading-History-Dependent Plastic Potential Function, 17

Small-Strain Behavior of Granular Soils. I: Model for Cemented and Uncemented Sands and Gravels, 876

Small-Strain Behavior of Granular Soils. II: Seismic Response Analyses and Model Evaluation, 877

A Stochastic Transformation Field Theory for Heterogeneous Materials, 564

Thermomechanical Framework for the Constitutive Modeling of Asphalt Concrete, 15

### Constitutive relations

Elastic Buckling of Laminated Conical Shells Using a Hierarchical High-Fidelity Analysis Procedure, 575

Pore Pressure Response Following Undrained uCPT Soundings in a Dilating Soil, 915

### Constraints

New Approach to Mission Design Based on the Fundamental Equations of Motion, 65

Optimal Design with Probabilistic Objective and Constraints, 445

### Constructability

Constructability Analysis of the Bridge Superstructure Rotation Construction Method in China, 323

Constructability Practices to Manage Sustainable Building Knowledge, 91

Constructability State of Practice Report, 325

## 2006 ASCE TRANSACTIONS

Construction, Inspection, and Maintenance of FRP Deck Panels, 245

Double-Layer Prefabricated FRP Grids for Rapid Bridge Deck Construction: Case Study, 208

Modeling of Functional Construction Requirements for Constructability Analysis, 418

New Method to Evaluate the Nailing Performance of Extruded High-Performance Fiber-Reinforced Cementitious Composites for Residential Applications, 1309

### Construction

Asphalt Mix Design and Construction: Past, Present, and Future, 2050

Automated People Mover Standards — Part 1 (ASCE 21-05), 2051

Blast and Construction Vibration Monitoring and Control: Thirty-Five-Year Perspective, 1971

Construction Delays in Hong Kong Civil Engineering Projects, 352

Experimental Capacity Assessment of Cold-Formed Boxed Stud and C Stud Wall Systems used in Australian Residential Construction, 1502

Pipelines 2006 — Service to the Owner, 2080

### Construction companies

Exploiting Knowledge Management: The Engineering and Construction Perspective, 1237

Exploratory Study of Knowledge Sharing in Contracting Companies: A Sociotechnical Perspective, 380

Firm Performance and Information Technology Utilization in the Construction Industry, 338

Job Performance Evaluation for Construction Companies: An Analytic Network Process Approach, 370

MAUT-Based Dispute Resolution Selection Model Prototype for International Construction Projects, 332

Relationship between Governance Structure and Financial Performance in Construction, 1239

### Construction costs

Constructability Analysis of the Bridge Superstructure Rotation Construction Method in China, 323

Determining Attribute Weights in a CBR Model for Early Cost Prediction of Structural Systems, 396

Firm Performance and Information Technology Utilization in the Construction Industry, 338

MACROS: Multiobjective Automated Construction Resource Optimization System, 1252

Predicting Construction Cost using Multiple Regression Techniques, 362

Validation of a Model for Predicting Schedule Changes in Highway Work Zones — Case Studies, 1733

### Construction equipment

Case for Drug Testing of Construction Workers, 1242

Decision-Support Tool for Assessing the Environmental Effects of Constructing Commercial Buildings, 102

Human-Assisted Obstacle Avoidance System using 3D Workspace Modeling for Construction Equipment Operation, 262

Innovations in Earthmoving Equipment: New Forms and Their Evolution, 386

Interpretation of Automatically Monitored Lifting Equipment Data for Project Control, 256

Minimizing Construction Vibration Effects, 11

Soil Penetration Modeling in Microtunneling Projects, 347

## SUBJECT INDEX

## Construction industry

- Statistical Considerations for Predicting Residual Value of Heavy Equipment, 359
- Systems Analysis of Technical Advancement in Earthmoving Equipment, 385
- Construction industry**
- Addressing Security in Early Stages of Project Life Cycle, 1259
- Analysis of Construction Worker Injuries That Do Not Result in Lost Time, 320
- Assessment with 360° Evaluations of Leadership Behavior in Construction Project Managers, 1246
- Benchmarking Initiatives in the Construction Industry: Lessons Learned and Improvement Opportunities, 1255
- Case-Based Reasoning Model for International Market Selection, 381
- Characteristics for Leveraging Value Management Processes on Capital Facility Projects, 1253
- Characteristics of Contractor's Liabilities for Defects and Defective Work in Korean Public Projects, 1422
- Comparative Injury and Fatality Risk Analysis of Building Trades, 342
- Comparative Study of University Courses on Critical-Path Method Scheduling, 358
- Comparing Procurement Methods for Design-Build Projects, 311
- Computer-Aided Site Layout Planning, 302
- Construction Delivery Systems: A Comparative Analysis of Their Performance within School Districts, 399
- Contractor Key Competitiveness Indicators: A China Study, 329
- Contractor Selection Criteria: Investigation of Opinions of Singapore Construction Practitioners, 387
- Crane-Related Fatalities in the Construction Industry, 377
- Critical Factors Affecting Schedule Performance: Evidence from Indian Construction Projects, 375
- Decision Tree Modeling Using Integrated Multilevel Stochastic Networks, 412
- Developing a Complexity Measure for Project Schedules, 343
- Developing Knowledge Landscapes through Project-Based Learning, 1416
- Development of an Industry Foundation Classes Assembly Viewer, 257
- Effect of Humor Usage by Engineers at Construction Sites, 1247
- The Effective Mediator, 1435
- Emotional Intelligence and Leadership Behavior in Construction Executives, 1251
- Examining the Business Impact of Owner Commitment to Sustainability, 326
- Exploring the Bidding Situation for Economically Most Advantageous Tender Projects using a Bidding Game, 390
- How Relational are Construction Contracts?, 1411
- Improving Value Generation in the Design Process of Industrial Projects using CAVT, 1243
- Incorporating Contractual Incentives to Facilitate Relational Contracting, 1412
- Indirect Discrimination in Construction Organizations and the Impact on Women's Careers, 1250
- Influences Impacting Leadership Development, 1245
- Interactions between Business and Financial Strategies of Large Engineering and Construction Firms, 1254
- Investigation of Critical Success Factors in Construction Project Briefing by Way of Content Analysis, 404
- "Is That Not Horrific?" — or "You Have Been Warned!" *Burchell v. Ballard* and Implications for English Construction Law, 1428
- Job Performance Evaluation for Construction Companies: An Analytic Network Process Approach, 370
- Lean Processes for Sustainable Project Delivery, 395
- Legal Challenge to a Best-Value Procurement System, 1906
- Legal Issues Associated with Emergent Actor Roles in Innovative U.K. Procurement: Prime Contracting Case Study, 1413
- Linear Programming Approach to Optimize Strategic Investment in the Construction Workforce, 402
- MAUT-Based Dispute Resolution Selection Model Prototype for International Construction Projects, 332
- Model for Environmental Risk Assessment of Tourism Project Construction on the Egyptian Red Sea Coast, 729
- Motivational Climate of Construction Apprentice, 341
- Multiproject Planning and Resource Controls for Facility Management, 416
- Non-Unit-Based Planning and Scheduling of Repetitive Construction Projects, 346
- Ontology-Centered Knowledge Management using Information Retrieval Techniques, 270
- Owner's Role in Construction Safety: Guidance Model, 305
- Partnering Mechanism in Construction: An Empirical Study on the Chinese Construction Industry, 310
- Physical Risk Factors and Controls for Musculoskeletal Disorders in Construction Trades, 393
- Preparing for Design-Build Projects: A Primer for Owners, Engineers, and Contractors, 2081
- Price and Nonprice Criteria for Contractor Selection, 367
- Progress of Statutory Adjudication as a Means of Resolving Disputes in Construction in the United Kingdom, 1426
- Proposed Subcontractor-Based Employee Motivational Model, 303
- Prototype System for Knowledge Problem Definition, 340
- Quantification of Costs for Dispute Resolution Procedures in the Construction Industry, 1429
- Quantitative Measurement of Successful Performance from the Project Manager's Perspective, 415
- Relative Effectiveness of Project Delivery and Contract Strategies, 288
- Safety Climate in Construction Industry: A Case Study in Hong Kong, 345
- Security of Payment Legislation — Case of a Blunt but Practical and Equitable Instrument, 1427
- Strategic Management of Human Resources in Construction, 1248
- Strengths, Weaknesses, Opportunities, and Threats for Foreign-Invested Construction Enterprises: A China Study, 384
- Testing Vickrey's Revenue Equivalence-Theory in Construction Auctions, 330

## **Construction industry**

- Tracking the Location of Materials on Construction Job Sites, 378
- Web-Enabled System Dynamics Model for Error and Change Management on Concurrent Design and Construction Projects, 273
- What Does the Construction Industry Value in its Workers?, 392
- Construction management**
- 3D Scan Information Management System for Construction Management, 301
- Adoption of the International Residential Code in a High Natural Hazards Region — An Overview, 85
- Application Framework for Mapping and Simulation of Waste Handling Processes in Construction, 408
- Application of Dependency Structure Matrix for Activity Sequencing in Concurrent Engineering Projects, 336
- Approaches to Improving the Quality of Construction Drawings from Owner's Perspective, 405
- Automated Statistical Analysis in Stochastic Project Scheduling Simulation, 315
- Avoiding and Minimizing Construction Delay Claim Disputes in Relational Contracting, 1421
- Case for Drug Testing of Construction Workers, 1242
- Case Study of Factors Affecting Urban Residential Construction in St. Louis, 1786
- CB-Contract: Case-Based Reasoning Approach to Construction Contract Strategy Formulation, 284
- Computerized System for Efficient Delivery of Infrastructure Maintenance/Repair Programs, 290
- Conceptual Planning Process for Electrical Construction, 417
- Conflict Resolution in Construction Disputes using the Graph Model, 391
- Constructability State of Practice Report, 325
- Construction Business Automation System, 296
- Construction Delays and Their Causative Factors in Nigeria, 354
- Construction Management of a Small-Scale Accelerated Pavement Testing Facility, 1388
- Construction Scheduling and Progress Control using Geographical Information Systems, 285
- Contractor Process Improvement for Enhancing Construction Productivity, 307
- Contractors' Views of the Potential Causes of Inconsistencies between Design and Construction in Saudi Arabia, 1372
- Critical Space Analysis, 335
- Delay Mitigation in the Malaysian Construction Industry, 300
- Determinants of International Architectural, Engineering, and Construction Firms' Project Success in China, 309
- Developing a Resource Supply Chain Planning System for Construction Projects, 327
- Downside Risks in Construction Projects Developed by the Civil Service: The Case of Spain, 372
- Economic Value of Building Faster, 363
- Effects of Schedule Pressure on Construction Performance, 306
- Emerging Legal Risks for Construction Management Professionals, 1914
- Enhanced Criterion for Base Soil Retention in Embankment Dam Filters, 929

## **2006 ASCE TRANSACTIONS**

- Evaluation Model for Information Systems Benefits in Construction Management Processes, 398
- Evaluation of Legal Risks for E-Commerce in Construction, 1438
- Example of a Hybrid Life-Cycle Assessment of Construction Processes, 1158
- Exploiting Knowledge Management: The Engineering and Construction Perspective, 1237
- Fast-Track Urban Freeway Rehabilitation with 55-H Weekend Closures: I-710 Long Beach Case Study, 334
- Firm Performance and Information Technology Utilization in the Construction Industry, 338
- Fundamental Analysis of Profitability of Large Engineering and Construction Firms, 1260
- Fundamental Principles of Workforce Management, 297
- Identifying a Design Management Package to Support Concurrent Design in Building Wafer Fabrication Facilities, 348
- Improving Enrollment in the Master of Construction Management Program at Bowling Green State University, 1434
- Improving the Safety and Efficiency of Materials Transfer at a Construction Site by using an Elevator, 371
- Integration of Construction As-Built Data via Laser Scanning with Geotechnical Monitoring of Urban Excavation, 410
- Investigation of Critical Success Factors in Construction Project Briefing by Way of Content Analysis, 404
- Lean Construction: From Theory to Implementation, 1256
- Logistic Likelihood Analysis of Mediation Outcomes, 389
- MACROS: Multiobjective Automated Construction Resource Optimization System, 1252
- Management and Construction of the Three Gorges Project, 349
- Minimizing Construction Vibration Effects, 11
- Model for Analysis of Factors Affecting Construction Schedules in Highway Work Zones, 1717
- Modeling of Functional Construction Requirements for Constructability Analysis, 418
- Multi-Agent Framework for General-Purpose Situational Simulations in the Construction Management Domain, 261
- Multimodal Image Retrieval from Construction Databases and Model-Based Systems, 365
- Object-Oriented Scheduling for Repetitive Projects with Soft Logics, 291
- Only Dynamics Can Absorb Dynamics, 403
- Optimal Planning and Scheduling for Repetitive Construction Projects, 1238
- Parallel Genetic Algorithms for Optimizing Resource Utilization in Large-Scale Construction Projects, 337
- Particle Swarm Optimization for Preemptive Scheduling under Break and Resource-Constraints, 314
- Particle Swarm Optimization-Supported Simulation for Construction Operations, 413
- Paving the Way to the Vision of Digital Construction: A Strategic Roadmap, 364
- Permutation-Based Particle Swarm Optimization for Resource-Constrained Project Scheduling, 259

## SUBJECT INDEX

- Procurement Routes in Public Building and Construction Projects, 356  
Prototype Tool for Mechanical, Electrical, and Plumbing Coordination, 249  
Relationship between Governance Structure and Financial Performance in Construction, 1239  
Scheduling Construction Projects using Evolutionary Algorithm, 374  
Scheduling-Based Risk Estimation and Safety Planning for Construction Projects, 351  
Sequence Planning for Electrical Construction, 324  
Stimulating Construction Innovation in Singapore through the National System of Innovation, 394  
Structural Insulated Panels: Impact on the Residential Construction Process, 366  
A Study of Styles and Outcomes in Construction Dispute Negotiation, 368  
Success/Failure Factors and Performance Measures of Web-Based Construction Project Management Systems: Professionals' Viewpoint, 295  
Survey of the Construction Industry Relative to the use of CPM Scheduling for Construction Projects, 357  
Total Quality Performance of Design/Build Firms using Quality Function Deployment, 292  
Tracking the Location of Materials on Construction Job Sites, 378  
Use of a WBS Matrix to Improve Interface Management in Projects, 294  
Using Global Positioning System to Improve Materials-Locating Processes on Industrial Projects, 361  
Using GPS to Measure the Impact of Construction Activities on Rural Interstates, 339  
Utilizing Dispute Review Boards in Relational Contracting: A Case Study, 1436  
Work Continuity Constraints in Project Scheduling, 289
- Construction materials**
- Characterization of Material Properties of HPS-485W (70 W) TMCP for Bridge Girder Applications, 114  
Decision-Support Tool for Assessing the Environmental Effects of Constructing Commercial Buildings, 102  
Developing a Resource Supply Chain Planning System for Construction Projects, 327  
High-Volume Fly Ash Concrete: Analysis and Application, 1976  
Improving the Safety and Efficiency of Materials Transfer at a Construction Site by using an Elevator, 371  
Long Mechanical Interaction between Strengthening Materials and Preexisting Structures, 1334  
Material Flow-Based Facility Layout Analysis of a Manufactured Housing Production Plant, 103  
Moondust and More, 2010  
Moondust and More, 2011  
The Paper Alternative, 2015  
Tracking the Location of Materials on Construction Job Sites, 378  
Using Global Positioning System to Improve Materials-Locating Processes on Industrial Projects, 361
- Construction methods**
- Constructability Analysis of the Bridge Superstructure Rotation Construction Method in China, 323  
Prototype Tool for Mechanical, Electrical, and Plumbing Coordination, 249

## Contaminants

- Safety Hazard Identification on Construction Projects, 308  
**Construction sites**  
Minimizing Construction-Related Hazards in Airport Expansion Projects, 344  
Model for Automated Monitoring of Fall Hazards in Building Construction, 360  
Only Dynamics Can Absorb Dynamics, 403  
Optimizing Airport Construction Site Layouts to Minimize Wildlife Hazards, 1257  
Scheduling-Based Risk Estimation and Safety Planning for Construction Projects, 351  
**Consulting services**  
Decline of the Engineering Class: Effects of Global Outsourcing of Engineering Services, 1910  
Operations Management for Engineering Consulting Firms: A Case Study, 1249  
**Contact pressure**  
Determination of Stress Intensity Factors for a Cracked Shell under Bending with Improved Shell Theories, 60  
Effect of Contact Pressure on Bond Strength of Fiber-Reinforced Polymer to Concrete, 215  
Effect of Sleeve Material on Interfacial Contact Behavior of CFRP-Metal Couples, 1358  
Full Two-Dimensional Model for Rolling Resistance: Hard Cylinder on Viscoelastic Foundation of Finite Thickness, 565  
**Contacts**  
New Approach to Determine Three-Dimensional Contacts in Blocks System: Penetration Edges Method, 42  
Three-Degree-of-Freedom Rigid Model for Seismic Analysis of Cracked Concrete Gravity Dams, 537  
**Container transportation**  
Evaluating the Impact of Vessel-Traffic Interference on Container Terminal Capacity, 1862  
**Containment**  
Contaminant Transport Model for Unsaturated Soil using Fuzzy Approach, 752  
Hydrocarbon Residuals and Containment in Microfine Cement Grouted Sand, 1284  
Modeling of Multilayer Composite Fabrics for Gas Turbine Engine Containment Systems, 62  
**Contaminants**  
Bioavailability Prediction of Polycyclic Aromatic Hydrocarbons in Field-Contaminated Sediment by Mild Extractions, 626  
Centrifuge Testing of LNAPL Migration and Soil Vapor Extraction for Soil Remediation, 1943  
Distribution System Contamination Events: Exposure, Influence, and Sensitivity, 1830  
Impact of Inherent Factors on the Radiolytic Degradation of Borefractory Contaminants, 755  
Improved Compartmental Modeling and Application to Three-Phase Contaminant Transport in Unsaturated Porous Media, 606  
Numerical Simulation of Depleted Uranium Transport in a Desert Environment using a Distributed Parameter Watershed Model, 1960  
Oxidation of Methyl *tert*-Butyl Ether in Aqueous Solution by an Ozone/UV Process, 743  
Watershed and River Systems Management Program: Overview of Capabilities, 1174

## Contamination

### Contamination

- Asymptotic Solutions for One-Dimensional Dispersion in Rivers, 940  
Attachment of Fecal Indicator Bacteria to Particles in the Neuse River Estuary, N.C., 736  
Bayesian Belief Networks to Integrate Monitoring Evidence of Water Distribution System Contamination, 1825  
Behavior of an Air Curtain Subjected to Transversal Pressure Variations, 611  
Bioremediation of Petroleum-Contaminated Soil using Composting, 1951  
Comparison of Crop Contamination by Microorganisms during Subsurface Drip and Furrow Irrigation, 725  
Comparison of Physical Sampling and Real-Time Monitoring Strategies for Designing a Contamination Warning System in a Drinking Water Distribution System, 1834  
Contamination Warning in Water Networks: General Mixed-Integer Linear Models for Sensor Location Design, 1824  
Enhancement of Remediation of NAPL Contaminated Fractured Permeable Formations — Modeling Study, 589  
Evaluating Ozone as a Remedial Treatment for Removing RDX from Unsaturated Soils, 763  
Evaluation of Contaminant Resuspension Potential during Cap Placement at Two Dissimilar Sites, 639  
Experimental Data and Theoretical Analysis of Particle Removal Efficiency in a Novel Hydraulic Separation Unit, 733  
Health Risk Assessment for a Contaminated Site: A Case Study, 1964  
Hydrocarbon Residuals and Containment in Microfine Cement Grouted Sand, 1284  
Identification of Contaminant Sources in Water Distribution Systems using Simulation — Optimization Method: Case Study, 1827  
Locating Monitors in Water Distribution Systems: Red Team-Blue Team Exercise, 1832  
Mixed-Integer Approach for Obtaining Unique Solutions in Source Inversion of Water Networks, 1826  
Modeling Substrate Interactions during Aerobic Biodegradation of Mixtures of Vinyl Chloride and Ethene, 705  
Porosity Fluctuations in Desiccating Samples of Grout-Stabilized Soil, 1289  
Removal of Lead from Contaminated Water and Clay Soil using a Biosurfactant, 687  
Solidification of New Zealand Harbor Sediments using Cementitious Materials, 1294
- Continuous beams**
- Approximate Floor Acceleration Demands in Multistory Buildings. I: Formulation, 6  
Partial Interaction Shear Flow Forces in Continuous Composite Steel-Concrete Beams, 1460
- Contract management**
- Contractual Management in PPP Projects: Evaluation of Legal versus Relational Contracting for Service Delivery, 1415  
Downside Risks in Construction Projects Developed by the Civil Service: The Case of Spain, 372  
Evaluation of Legal Risks for E-Commerce in Construction, 1438  
How Relational are Construction Contracts?, 1411

## 2006 ASCE TRANSACTIONS

- Incorporating Contractual Incentives to Facilitate Relational Contracting, 1412  
Management and Construction of the Three Gorges Project, 349  
Model for Financial Renegotiation in Public-Private Partnership Projects and Its Policy Implications: Game Theoretic View, 355  
Owner's Role in Construction Safety, 304  
Utilizing Dispute Review Boards in Relational Contracting: A Case Study, 1436
- Contraction**
- Flow in Compound Channel with Abrupt Floodplain Contraction, 1026  
Scour around Bankline and Setback Abutments in Compound Channels, 933
- Contractors**
- Case for Drug Testing of Construction Workers, 1242  
Characteristics of Contractor's Liabilities for Defects and Defective Work in Korean Public Projects, 1422  
Classifying Construction Contractors Using Unsupervised-Learning Neural Networks, 411  
Conceptual Planning Process for Electrical Construction, 417  
Contractor Key Competitiveness Indicators: A China Study, 329  
Contractor Process Improvement for Enhancing Construction Productivity, 307  
Contractor Selection Criteria: Investigation of Opinions of Singapore Construction Practitioners, 387  
Contractors' Views of the Potential Causes of Inconsistencies between Design and Construction in Saudi Arabia, 1372  
Ozonation of 2-Chlorophenol in Aqueous Solutions with a Packed Contactor, 775  
Price and Nonprice Criteria for Contractor Selection, 367  
Procurement Routes in Public Building and Construction Projects, 356  
Progressive Collapse — An Implosion Contractor's Stock in Trade, 1405  
Sequence Planning for Electrical Construction, 324
- Contracts**
- Alliancing in Australia — No-Litigation Contracts: A Tautology?, 1414  
Avoiding and Minimizing Construction Delay Claim Disputes in Relational Contracting, 1421  
CB-Contract: Case-Based Reasoning Approach to Construction Contract Strategy Formulation, 284  
Characteristics of Contractor's Liabilities for Defects and Defective Work in Korean Public Projects, 1422  
Crew Production Rates for Contract Time Estimation: Beam Erection, Deck, and Rail of Highway Bridges, 328  
Downside Risks in Construction Projects Developed by the Civil Service: The Case of Spain, 372  
Exploratory Study of Knowledge Sharing in Contracting Companies: A Sociotechnical Perspective, 380  
How Relational are Construction Contracts?, 1411  
Incorporating Contractual Incentives to Facilitate Relational Contracting, 1412  
Legal Issues Associated with Emergent Actor Roles in Innovative U.K. Procurement: Prime Contracting Cast Study, 1413

## SUBJECT INDEX

- Model for Financial Renegotiation in Public-Private Partnership Projects and Its Policy Implications: Game-Theoretic View, 355  
Owner's Role in Construction Safety: Guidance Model, 305  
Parallel Genetic Algorithms for Optimizing Resource Utilization in Large-Scale Construction Projects, 337  
Physics of Liquefaction Phenomena around Marine Structures, 1877  
Preparing for Design-Build Projects: A Primer for Owners, Engineers, and Contractors, 2081  
Procurement Routes in Public Building and Construction Projects, 356  
Public Clients' Best Value Perspectives of Public Private Partnerships in Infrastructure Development, 298  
Relative Effectiveness of Project Delivery and Contract Strategies, 288  
Security of Payment Legislation — Case of a Blunt but Practical and Equitable Instrument, 1427  
Soil Penetration Modeling in Microtunneling Projects, 347  
Testing Vickery's Revenue Equivalence Theory in Construction Auctions, 330  
**Control**  
Semiactive Fuzzy Control of the Seismic Response of Building Frames, 1519  
**Control methods**  
Implementation of a Feasible Control Design Process Incorporating Robustness Criteria for Wind-Excited High-Rise Buildings, 1448  
Model for Automated Monitoring of Fall Hazards in Building Construction, 360  
New Approach to Mission Design Based on the Fundamental Equations of Motion, 65  
**Control systems**  
Development of Real-Time Safety Control System for Urban Gas Supply Network, 801  
Event-Driven Control System for Geographically Distributed Hybrid Simulation, 1446  
Integrated Optimization of Control System for Smart Cylindrical Shells using Modified GA, 66  
Optimal  $H_2$  Output Feedback Control Systems with Time Delay, 549  
Sampled Data Feedback-Feedforward Control of Structures with Time Delays, 1549  
Systems Analysis of Technical Advancement in Earthmoving Equipment, 385  
Tuning of Robust Distant Downstream PI Controllers for an Irrigation Canal Pool. I: Theory, 1204  
Tuning of Robust Distant Downstream PI Controllers for an Irrigation Canal Pool. II: Implementation Issues, 1205  
**Conveyors**  
Full Two-Dimensional Model for Rolling Resistance: Hard Cylinder on Viscoelastic Foundation of Finite Thickness, 565  
**Cooling**  
Effect of Envelope on Residential Cooling Load Coupled with Use of Solar/Photovoltaic Panels, 428  
Improving Air-Cooled Condenser Performance in Combined Cycle Power Plants, 429  
New Static Sunshade Design for Energy-Efficient Buildings, 422

## Corrosion

- Cooling towers  
Sustainability and Economics of the Advanced High-Temperature Reactor, 432  
**Copper**  
Effect of Sleeve Material on Interfacial Contact Behavior of CFRP-Metal Couples, 1358  
Treatment of Acid Rock Drainage in a Meromictic Mine Pit Lake, 640  
Zirconia-Supported Copper Oxide — A Catalyst for Removal of Vehicular Exhaust Gas Pollutants, 707  
**Core walls**  
Design of a Rigid Cutoff Wall, 34  
Membrane Behavior of Two Backfills from Field-Constructed Soil-Bentonite Cutoff Walls, 892  
Slug Test Analysis in Vertical Cutoff Walls. I: Analysis Methods, 817  
Slug Test Analysis in Vertical Cutoff Walls. II: Applications, 818  
Stability of Long Trenches in Sand Supported by Bentonite-Water Slurry, 4  
**Corners**  
Bivariate Quasi-Steady Model for Prediction of Roof Corner Pressures, 61  
Distortional Buckling of Cold-Formed Stainless Steel Sections: Experimental Investigation, 1488  
Distortional Buckling of Cold-Formed Stainless Steel Sections: Finite-Element Modeling and Design, 1489  
**Corporations**  
Boardrooms of Energy Firms in the Post-Enron Era, 424  
**Correlation**  
Bioavailability Prediction of Polycyclic Aromatic Hydrocarbons in Field-Contaminated Sediment by Mild Extractions, 626  
Multivariate Simulation and Multimodal Dependence Modeling of Vehicle Axle Weights with Copulas, 1767  
Seismic Fragility Analysis of Structural Systems, 473  
Stochastic Point Rainfall Modeling for Correlated Rain Cell Intensity and Duration, 1073  
**Corrosion**  
CFRP Repair and Strengthening of Structurally Deficient Piles: Design Issues and Field Application, 191  
Change of Weld Residual Stresses due to Loss of Material, 1630  
Dissolution of Wollastonite in a Packed Bed Contactor, 634  
Effect of Fiber-Reinforced Polymer Wraps on Corrosion Activity and Concrete Cracking in Chloride-Contaminated Concrete Cylinders, 202  
Influence of Electrochemical Cloride Extraction on the Performance of Prestressed Concrete under Dynamic Loading Conditions, 1355  
In-Service Durability Performance of Water Tanks, 1377  
Mechanical Model for Unbonded Seven-Wire Tendon with Single Broken Wire, 576  
Performance of a Penetrating Corrosion Inhibitor in Concrete Affected by Carbonation-Induced Corrosion, 1359  
Recent Progress in the Modeling of Corrosion of Structural Steel Immersed in Seawaters, 1152

**Corrugating**

Behavior of Corrugated Web I-Girders under In-Plane Loads, 517

Fatigue Life of Girders with Trapezoidal Corrugated Webs, 1543

Fatigue of Corrugated-Web Plate Girders: Analytical Study, 1575

Fatigue of Corrugated-Web Plate Girders: Experimental Study, 1574

Torsional Design of Hybrid Concrete Box Girders, 136

**Cost analysis**

Comparison of Modeling and Measurement Accuracy of Road Condition Data, 1742

Screening Tools for Considering Grade Separation at Rail-Highway Crossings, 1668

**Cost control**

Construction Management of a Small-Scale Accelerated Pavement Testing Facility, 1388

Design Considerations for Lysimeters Used to Evaluate Alternative Earthen Final Covers, 919

Examining the Business Impact of Owner Commitment to Sustainability, 326

Fundamental Principles of Workforce Management, 297

Minimizing Construction-Related Hazards in Airport Expansion Projects, 344

Modeling Cost Escalation in Large Infrastructure Projects, 373

Offshore Decommissioning Cost Estimation in the Gulf of Mexico, 313

Optimal Scheduling of Replacement and Rehabilitation of Water Distribution Systems, 1155

Physical Risk Factors and Controls for Musculoskeletal Disorders in Construction Trades, 393

Quantification of Costs for Dispute Resolution Procedures in the Construction Industry, 1429

Set Sprinkler Irrigation and Its Cost, 1214

Short- and Long-Term Effects of Element Costs and Failure Costs in Ponies, 166

**Cost estimates**

Determining Attribute Weights in a CBR Model for Early Cost Prediction of Structural Systems, 396

**Costs**

Alternative Decision Making in Water Distribution Network with NSGA-II, 1813

Forecasting Project Status by using Fuzzy Logic, 406

Multi-Objective Trade-Offs between Cost and Reliability in the Replacement of Water Mains, 1809

Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Combination of Maintenance Types, 1619

Probability-Based Bridge Network Performance Evaluation, 167

Remediation of RDX-Contaminated Water using Alkaline Hydrolysis, 610

**Coupled walls**

Experimental Evaluation of Posttensioned Hybrid Coupled Wall Subassemblies, 1538

Grace under Pressure, 2013

Seismic Design and Analytical Modeling of Posttensioned Hybrid Coupled Wall Subassemblies, 1539

**Coupling**

Coupled Building Control Considering the Effects of Building/Connector Configuration, 1524

Coupled Heat-Deformation-Flow Analysis for Clayey Soil, 826

Coupled Surge-Heave Motions of a Moored System: I: Model Calibration and Parametric Study, 501

Coupled Surge-Heave Motions of a Moored System: II: Stochastic Analysis and Simulations, 502

Coupling of U-Tube and Shear Layer Oscillations in an Interconnected Flow Compartment, 511

DEM-FEM Model of Highly Saturated Soil Motion Due to Seepage Force, 1892

Effect of Envelope on Residential Cooling Load Coupled with Use of Solar/Photovoltaic Panels, 428

Efficient Solution of the Coupled One-Dimensional Surface — Two-Dimensional Subsurface Flow during Furrow Irrigation Advance, 1206

Experimental Evaluation of Posttensioned Hybrid Coupled Wall Subassemblies, 1538

Free Transverse and Lateral Vibration of Beams with Torsional Coupling, 59

Hydraulic Damping of Saturated Poroelastic Soils During Steady-State Vibration, 523

Seismic Design and Analytical Modeling of Posttensioned Hybrid Coupled Wall Subassemblies, 1539

**Cracking**

Blast and Construction Vibration Monitoring and Control: Thirty-Five-Year Perspective, 1971

Computation of Mixed-Mode Stress Intensity Factors for Cracks in Three-Dimensional Functionally Graded Solids, 435

Cracking Tendency of Self-Compacting Concrete Subjected to Restrained Shrinkage: Experimental Study and Modeling, 1266

Damage Assessment in Beams using Inverse Method, 469

Determination of Stress Intensity Factors for a Cracked Shell under Bending with Improved Shell Theories, 60

Determining the Tensile Stress-Crack Opening Curve of Concrete by Inverse Analysis, 449

Effect of Early-Age Temperature Rise on the Stability of Rapid-Hardening Cement Fiber Composites, 1325

Effect of Fiber-Reinforced Polymer Wraps on Corrosion Activity and Concrete Cracking in Chloride-Contaminated Concrete Cylinders, 202

Effects of FRP-Concrete Interface Bond Properties on the Performance of RC Beams Strengthened in Flexure with Externally Bonded FRP Sheets, 1345

Energy-Based Modeling Approach for Debonding of FRP Plate from Concrete Substrate, 492

Evaluation of Early Strength Requirement of Concrete for Slab Replacement using Accelerated Pavement Testing, 1749

Evaluation of the Parameters Influencing Self-Healing in Earth Dams, 860

Failure Investigation of a Foamed-Asphalt Highway Project, 1140

Fracture Analysis of Shear Deformable Bi-Material Interface, 466

Girder Differential Deflection and Distortion-Induced Fatigue in Skewed Steel Bridges, 121

High-Cycle Fatigue of Diagonally Cracked Reinforced Concrete Bridge Girders: Field Tests, 173

## SUBJECT INDEX

- Identifying Effective and Ineffective Retrofits for Distortion Fatigue Cracking in Steel Bridges Using Field Instrumentation, 178
- Influence of Secondary Elements and Deck Cracking on the Lateral Load Distribution of Steel Girder Bridges, 122
- Influence of Toughness on the Apparent Cracking Load of Fiber-Reinforced Concrete Slabs, 1634
- Lateral Response Evaluation of Single Piles Using Inclinometer Data, 923
- Measuring System for Cracks in Concrete using Multitemporal Images, 1651
- Mechanistic Model for Self-Healing of Core Cracks in Earth Dams, 861
- Nonlinear Stiffness Design Optimization of Tall Reinforced Concrete Buildings under Service Loads, 1536
- Peel and Shear Fracture Characterization of Debonding in FRP Plated Concrete Affected by Moisture, 192
- Performance of Structures before and during Failure, 1972
- Polyethylene Duct Cracking on Posttensioning Tendons in Florida Segmented Bridges, 1327
- Porothermoelastic Analysis of the Response of a Stationary Crack using the Displacement Discontinuity Method, 437
- Response Prediction of RC Beams Externally Bonded with Steel-Reinforced Polymers, 207
- Simulation of Crack Propagation in Asphalt Concrete using an Intrinsic Cohesive Zone Model, 563
- Static Strength of Cracked Square Hollow Section T-Joints under Axial Loads. I: Experimental, 1475
- Strain Rate Model for Dynamic Analysis of Reinforced Concrete Structures, 1576
- Stress Zones near Displacement Piers: II. Radial Cracking and Wedging, 783
- Structural Monitoring and Integrity Assessment of Medieval Towers, 1605
- Study on the Average Fracture Energy for Crack Propagation in Concrete, 1357
- Use of an Infrared Joint Heater to Improve Longitudinal Joint Performance in Hot Mix Asphalt Pavements, 1380
- Void Growth Model and Stress Modified Critical Strain Model to Predict Ductile Fracture in Structural Steels, 1627
- Water Transport in Concrete Damaged by Tensile Loading and Freeze-Thaw Cycling, 1307
- Cranes**
- Crane-Related Fatalities in the Construction Industry, 377
- Creep**
- Characterization of a Pultruded FRP Sheet Pile for Waterfront Retaining Structures, 1333
- Cracking Tendency of Self-Compacting Concrete Subjected to Restrained Shrinkage: Experimental Study and Modeling, 1266
- Creep Buckling of Shallow Parabolic Concrete Arches, 1601
- Effect of Test Piece Size on Rheological Behavior of Wood Composites, 518
- Evaluation of Distress in Supports of Hyperbolic Paraboloid Shell, 1364
- Factors Affecting the Creep Behavior of Grouted Sand, 823

## Cross sections

- Long-Term Behavior of Precast Segmental Cantilever Bridges, 137
- Long-Term Behavior of Timber-Concrete Composite Beams. I: Finite Element Modeling and Validation, 1440
- Long-Term Behavior of Timber-Concrete Composite Beams. II: Numerical Analysis and Simplified Evaluation, 1441
- Performance of Structures before and during Failure, 1972
- Preflex Beams: A Method of Calculation of Creep and Shrinkage Effects, 108
- Residual Performance of FRP-Retrofitted RC Columns after being Subjected to Cyclic Loading Damage, 219
- Service-Stage Analysis of Curved Composite Steel-Concrete Bridge Beams, 1629
- Critical flow**
- Hydraulic Performance Curves for Highway Culverts, 978
- Minimum Specific Energy and Critical Flow Conditions in Open Channels, 1221
- Optimal Design of Open Channel Section Incorporating Critical Flow Condition, 1223
- Critical load**
- Assessing the Financial Feasibility of Utility-Provided Backup Power during Project Site Planning, 419
- Axisymmetric Nonlinear Stability of a Shallow Conical Shell with a Spherical Cap of Arbitrary Variable Shell Thickness, 555
- Critical path method**
- Automated Statistical Analysis in Stochastic Project Scheduling Simulation, 315
- Critical Space Analysis**, 335
- Work Continuity Constraints in Project Scheduling, 289
- Crops**
- Comparison of Crop Contamination by Microorganisms during Subsurface Drip and Furrow Irrigation, 725
- Development of GIS-Based Model to Estimate Relative Reductions in Crop Yield due to Salinity and Waterlogging, 1227
- Estimation of Evapotranspiration of Different-Sized Navel-Orange Tree Orchards using Energy Balance, 1164
- Measurement of Light Interception by Navel Orange Orchard Canopies: Case Study of Lindsay, California, 1165
- Optimal Reservoir Operation for Irrigation of Multiple Crops using Genetic Algorithms, 1178
- Optimal Reservoir Operations for Irrigation using a Three Spatial Scales Approach, 1179
- Performance-Based Optimization of Land and Water Resources within Irrigation Schemes. I: Method, 1201
- Performance-Based Optimization of Land and Water Resources within Irrigation Schemes. II: Application, 1202
- Cross sections**
- Broad-Crested Weirs with Rectangular Compound Cross Sections, 1193
- Complex Edge Stiffeners for Thin-Walled Members, 1459

## Cross sections

Exact Solution of Out-of-Plane Problems of an Arch with Varying Curvature and Cross Section, 494

### Crude oil

Effects of Nutrient Source and Supply on Crude Oil Biodegradation in Continuous-Flow Beach Microcosms, 591

### Culverts

Full-Scale Field Tests on Flexible Pipes under Live Load Application, 1366

Hydraulic Performance Curves for Highway Culverts, 978

Validation of Shoring Made of HDPE Pipe or CGS Pipe Normally Used for Culverts and Sewers, 1974

### Currents

Application of a Bottom Boundary Layer Model in Contrasting Wave and Current Environments: Grays Harbor, Washington, 1890

Burial of Short Cylinders Induced by Scour under Combined Waves and Currents, 1897

Control of Scour at Vertical Circular Piles under Waves and Current, 959

Entrainment Properties of Plane Surface-Jets in Shallow Current, 967

Estuarine and Coastal Modeling — Proceedings of the Ninth International Conference, 2064

Experimental Analysis and Numerical Simulations of Waves and Current Flows around Low-Crested Rubble-Mound Structures, 1856

Fully Nonlinear Boussinesq-Type Equations for Waves and Currents over Porous Beds, 457

Hydrodynamic Characterization and Modeling of the Arabian Gulf, 1859

Spatial and Temporal Characteristics of Transient Extreme Wave Profiles on Depth-Varying Currents, 541

Three-Dimensional Modeling of the Ruwais Coastal Area of United Arab Emirates, 1902

### Curricula

Comparative Study of University Courses on Critical-Path Method Scheduling, 358

Determining the Content of the First Course in Transportation Engineering, 1423

### Curtain walls

Curtain Wall Designs for Wind and Blast: Three Case Studies, 99

Static and Cyclic Racking Performance of Autoclaved Aerated Concrete Cladding Panels, 86

### Curvature

Critical Review of Deflection Formulas for FRP-RC Members, 206

Determination of Stress Intensity Factors for a Cracked Shell under Bending with Improved Shell Theories, 60

Examination of Level of Analysis Accuracy for Curved I-Girder Bridges through Comparisons to Field Data, 120

Response Prediction of RC Beams Externally Bonded with Steel-Reinforced Polymers, 207

Simplified Structural Analysis of Retaining Walls on Stepped Footings, 1973

Spatial Stability of Shear Deformable Nonsymmetric Thin-Walled Curved Beams: A Centroid-Shear Center Formulation, 573

## 2006 ASCE TRANSACTIONS

Symmetric Catenary of a Uniform Elastic Cable of Neo-Hookean Material, 509

### Curve fitting

Slug Test Analysis in Vertical Cutoff Walls. I: Analysis Methods, 817

### Curved beams

Construction of a Horizontally Curved Steel I-Girder Bridge. Part I: Erection Sequence, 112

Construction of a Horizontally Curved Steel I-Girder Bridge. Part II: Inconsistent Detailing, 113

Exact Solution of Out-of-Plane Problems of an Arch with Varying Curvature and Cross Section, 494

### Cyclic loads

Behavior of Beam-Column Joints made of Sustainable Concrete under Cyclic Loading, 1336

Bond Behavior of Near-Surface Mounted CFRP Laminate Strips under Monotonic and Cyclic Loading, 218

CPT-Based Probabilistic and Deterministic Assessment of in Situ Seismic Soil Liquefaction Potential, 873

Cyclic Lateral Load Response of Bridge Column-Foundation-Soil Systems in Freezing Conditions, 1611

Energy Evaluation for Ramberg — Osgood Hysteretic Model, 529

Experimental Behavior of Stiffened and Unstiffened End-Plate Connections under Cyclic Loading, 1572

Experimental Performance of Link-to-Column Connections in Eccentrically Braced Frames, 1557

Fracture Mechanics Based Model for Joints under Cyclic Loading, 556

Passive Earth Pressure Mobilization during Cyclic Loading, 884

Physics of Liquefaction Phenomena around Marine Structures, 1877

Racking Performance of Tall Unblocked Shear Walls, 1452

Residual Performance of FRP-Retrofitted RC Columns after being Subjected to Cyclic Loading Damage, 219

A Robust Macroelement Model for Soil — Pile Interaction under Cyclic Loads, 898

Seismic-Resistant Weld-Free Steel Frame Buildings with Mechanical Joints and Hysteretic Dampers, 1525

Simple Phenomenological Model for Reinforcing Steel under Arbitrary Load, 1542

Stability and Ductility of Thin-Walled Circular Steel Columns under Cyclic Bidirectional Loading, 1599

Stability Requirements for Beams in Seismic Steel Moment Frames, 1570

Standard Penetration Test-Based Probabilistic and Deterministic Assessment of Seismic Soil Liquefaction Potential, 10

Testing Protocol for Short Links in Eccentrically Braced Frames, 1554

Testing Protocol for Short Links in Eccentrically Braced Frames, 1555

Threshold Shear Strain for Cyclic Pore-Water Pressure in Cohesive Soils, 900

Truck Models for Improved Fatigue Life Predictions of Steel Bridges, 111

### Cyclic strength

Assessment of the Liquefaction Susceptibility of Fine-Grained Soils, 885

SU

Com

A

M

Corr

an

Si

Influ

ty

Lique

90

Cycl

Cold

tu

Effec

th

15

How

Li

Long

M

Mid

for

Seis

Se

Stru

Pa

Use

L

Cyl

Buri

C

Effec

si

C

Finis

ad

C

Fluid

a

Large

Res

B

Sim

o

Cyl

Des

Inte

C

Nor

V

Nor

P

She

I

The

L

Vib

T

Cze

Les

Dar

Eart

## SUBJECT INDEX

- Comparative Study of Fatigue Provisions for the AASHTO Fatigue Guide Specifications and LRFR Manual for Evaluation, 169
- Correlation between Cyclic Resistance Ratios of Intact and Reconstituted Offshore Saturated Sands and Silts with the Same Shear Wave Velocity, 924
- Influence of Nonplastic Fines on Shear Wave Velocity-Based Assessment of Liquefaction, 878
- Liquefaction, Cyclic Mobility, and Failure of Silt, 845
- Liquefaction Susceptibility Criteria for Silts and Clays, 908
- Cyclic tests**
- Cold-Formed Steel Frame Shear Walls Utilizing Structural Adhesives, 1497
- Effects of Vertical Load and Hold-Down Anchors on the Cyclic Response of Wood Framed Shear Walls, 1579
- How Reliable is the Plasticity Index for Estimating the Liquefaction Potential of Clayey Sands?, 790
- Long Mechanical Interaction between Strengthening Materials and Preexisting Structures, 1334
- Midply Wood Shear Wall System: Concept and Performance in Static and Cyclic Testing, 1578
- Seismic Upgrading of RC Buildings by FRP: Full-Scale Tests of a Real Structure, 1337
- Structural Behavior of FRP Composite Bridge Deck Panels, 141
- Use of Artificial Neural Networks in the Prediction of Liquefaction Resistance of Sands, 917
- Cylinders**
- Burial of Short Cylinders Induced by Scour under Combined Waves and Currents, 1897
- Effect of Fiber-Reinforced Polymer Wraps on Corrosion Activity and Concrete Cracking in Chloride-Contaminated Concrete Cylinders, 202
- Finite-Element Computation of Wave-Structure Interaction between Steep Stokes Waves and Vertical Cylinders, 1886
- Fluid-Soil-Structure Interaction in Liquefaction around a Cyclically Moving Cylinder, 1882
- Large-Eddy Simulation of High Reynolds Number Turbulent Flow Past a Square Cylinder, 468
- Response Amplitude and Hydrodynamic Force for a Buoy over a Convex, 1864
- Similitude of Large-Scale Turbulence in Experiments on Local Scour at Cylinders, 934
- Cylindrical shells**
- Design Analysis for Buckling of Tanks and Silos, 1443
- Integrated Optimization of Control System for Smart Cylindrical Shells using Modified GA, 66
- Nonlinear Response of Double-Wall Cylindrical Shell Vibrations under Random Excitation, 63
- Nonlinear Response of Laminated Cylindrical Shell Panels Subjected to Thermomechanical Loads, 548
- Shear Response of Concrete-Filled FRP Composite, 1533
- Thermomechanical Postbuckling Analysis of Cross-Ply Laminated Cylindrical Shell Panels, 448
- Vibration of Open Cylindrical Shells with Stepped Thickness Variations, 514
- Czech Republic**
- Less is More, 2008
- Dam design**
- Earth Dam with Toe Drain on an Impervious Base, 50
- Damage**
- Dam Break Wave of Thixotropic Fluid, 960
- Dam-Break Wave-Front Celerity, 938
- Dam safety**
- Evaluation of the Parameters Influencing Self-Healing in Earth Dams, 860
- Mechanistic Model for Self-Healing of Core Cracks in Earth Dams, 861
- Physically Based Model for Evaluation of Rock Scour due to High-Velocity Jet Impact, 5
- Streaming Solutions, 1997
- Damage**
- Assessment of Localized Damage in Concrete under Compression using Acoustic Emission, 1296
- Bayesian Network for E/M Impedance-Based Damage Identification, 267
- Bimodal Alongwind Fatigue of Structures, 1528
- Characteristics of Contractor's Liabilities for Defects and Defective Work in Korean Public Projects, 1422
- Condensed Model Identification and Recovery for Structural Damage Assessment, 1638
- Damage and Damage Prediction for Wood Shearwalls Subjected to Simulated Earthquake Loads, 1381
- Damage Identification Based on Dead Load Redistribution: Methodology, 1562
- Damage Identification Based on Dead Load Redistribution: Effect of Measurement Error, 1563
- Damage-Coupled Progressive Failure and Yield Line Analyses of Metal Plates, 483
- Downstream Economic Benefits of Conservation Development, 1804
- Effect of Heavy Multiple Axle Trucks on Flexible Pavement Damage using In-Service Pavement Performance Data, 1747
- Effects of Strain and Damage on Strain-Sensing Ability of Carbon Fiber Cement, 1299
- Elastoplastic Damage Modeling in Unsaturated Rocks and Applications, 23
- Flexibility-Based Damage Localization from Stochastic Realization Results, 499
- HAZUS Earthquake Loss Estimation Methods, 1927
- HAZUS-MH Flood Loss Estimation Methodology. I: Overview and Flood Hazard Characterization, 1928
- HAZUS-MH Flood Loss Estimation Methodology. II: Damage and Loss Assessment, 1929
- HAZUS-MH Hurricane Model Methodology. I: Hurricane Hazard, Terrain, and Wind Load Modeling, 1930
- HAZUS-MH Hurricane Model Methodology. II: Damage and Loss Estimation, 1931
- Hurricane Katrina: Performance of Transportation Systems, 2074
- Identification of the Location and Level of Damage in Multiple-Bolted-Joint Structures by PZT Actuator-Sensors, 1469
- Improved Image Analysis for Evaluating Concrete Damage, 265
- Innovative Bridge Condition Assessment from Dynamic Response of a Passing Vehicle, 579
- In-Service Evaluation of Cable-Stayed Bridges, Overview of Available Methods, and Findings, 175
- Legal Consequences of Damages to Underground Facilities by Horizontal Directional Drilling, 1437
- Microvoid Damage Model with Material Dilatation for Ductile Fracture, 546

## Damage

- Modal Strain Energy Decomposition Method for Damage Localization in 3D Frame Structures, 533  
Modeling the Impact of Failed Members for Progressive Collapse Analysis of Frame Structures, 1403  
Nondestructive Assessment of Reinforced Concrete Structures Based on Fractal Damage Characteristic Factors, 531  
Price of Permits: Measuring the Economic Impacts of Wetland Development on Flood Damages in Florida, 1934  
Probabilistic Service Life Assessment and Maintenance Planning of Concrete Structures, 1521  
Regenesis, 2029  
Residual Performance of FRP-Retrofitted RC Columns after being Subjected to Cyclic Loading Damage, 219  
Response of Air-Entrained Concrete to Severe Chemical Aggression, 1262  
Seismic Performance of Industrial Facilities Affected by the 1999 Turkey Earthquake, 1367  
Static Equivalency in Progressive Collapse Alternate Path Analysis: Reducing Conservatism While Retaining Structural Integrity, 1401  
Structural Damage Detection from Wavelet Coefficient Sensitivity with Model Errors, 547  
System Identification and Damage Detection of a Pre-stressed Concrete Beam, 1606  
Temporal Thermal Behavior and Damage Simulations of FRP Deck, 148  
Toward a Physical Damage Variable for Concrete, 512  
Truck Models for Improved Fatigue Life Predictions of Steel Bridges, 111  
Use of Modal Flexibility for Damage Detection and Condition Assessment: Case Studies and Demonstrations on Large Structures, 1607  
Water Transport in Concrete Damaged by Tensile Loading and Freeze-Thaw Cycling, 1307
- Damage assessment**
- Blind Test Results for Nondestructive Damage Detection in a Steel Frame, 1520  
Catastrophe-Induced Destruction and Reconstruction, 1924  
Cross-Modal STrain Energy Method for Estimating Damage Severity, 477  
Damage Assessment in Beams using Inverse Method, 469  
Damage Localization and Finite-Element Model Updating Using Multiresponse NDT Data, 172  
Development of Real-Time Safety Control System for Urban Gas Supply Network, 801  
Lessons Learned from an Emergency Bridge Replacement Project, 321  
More Efficient Seismic Loading for Multidegrees of Freedom Structures, 1604  
New Three-Dimensional Damage Index for RC Buildings with Planar Irregularities, 1585  
Structural Damage Detection via Modal Data with Genetic Algorithms, 1586
- Damping**
- Application of Internally Damped Shearbeam Model to Analysis of Buildings under Earthquakes: Robust Procedure for Quick Evaluation of Seismic Performance, 1550  
Coupled Surge-Heave Motions of a Moored System. I: Model Calibration and Parametric Study, 501

## 2006 ASCE TRANSACTIONS

- Coupled Surge-Heave Motions of a Moored System. II: Stochastic Analysis and Simulations, 502  
Damping in Shear Beam Structures and Estimation of Drift Response, 522  
Degradation of Sands due to Combined Sinusoidal Loading, 930  
Displacement-Based Design of Supplemental Dampers for Seismic Retrofit of a Framed Structure, 1526  
Dynamic Anomalies in a Modular Bridge Expansion Joint, 157  
Dynamic Ratcheting in Elastoplastic Single-Degree-of-Freedom Systems, 475  
Dynamic Stability of Ferromagnetic Beam-Plates with Magnetoelastic Interaction and Magnetic Damping in Transverse Magnetic Fields, 476  
Energy Evaluation for Ramberg—Osgood Hysteretic Model, 529  
Experimental Verification of Smart Cable Damping, 462  
Hydraulic Damping of Saturated Poroelastic Soils During Steady-State Vibration, 523  
Hyperelasticity Model for Finite-Element Analysis of Natural and High Damping Rubbers in Compression and Shear, 440  
Hysteretic Model of Stiffened Shear Panel Dampers, 1486  
Influence of Temperature and Pressure on the Dynamic Properties of Rubber-Modified Asphalt Concrete, 1275  
Modified Sturm Sequence Property for Damped Systems, 515  
ONDA: Computer Code for Nonlinear Seismic Response Analyses of Soil Deposits, 800  
Optimal Nonlocal and Asymmetric Structural Damping using Regenerative Force Actuation Networks, 532  
Optimal Vibration Absorber with Nonlinear Viscous Power Law Damping and White Noise Excitation, 439  
Pendulum Tuned Mass Dampers for Floor Vibration Control, 1371  
Range of Validity of the Transient Damping Leakage Detection Method, 1025  
Relating Damping to Soil Permeability, 28  
Response of Nonstructural Components in Structures with Damping Systems, 1547  
Seismic-Resistant Weld-Free Steel Frame Buildings with Mechanical Joints and Hysteretic Dampers, 1525  
Semiactive Fuzzy Control of the Seismic Response of Building Frames, 1519  
Stress Reduction Coefficient and Amplification Factor for Seismic Response of Ground, 26  
Thermoelastic Enhancement of Damping of Sand using Synthetic Ground Rubber, 824  
Validating Wind-Induced Response of Tall Buildings: Synopsis of the Chicago Full-Scale Monitoring Program, 1588  
Viscous Effect on the Roll Motion of a Rectangular Structure, 454
- Dams**
- Case Study: Dam Safety during Construction, Lessons of the Overtopping Diversion Works at Aguamilpa Dam, 1045  
Construction of Concrete-Faced Rockfill Dams with Weak Rocks, 849  
Earthquake Hydrodynamic Pressure on Dams, 1046

## SUBJECT INDEX

- Fuzzy Logic Model for Equilibrium Scour Downstream of a Dam's Vertical Gate, 1038  
Physical and Numerical Comparison of Flow over Ogee Spillway in the Presence of Tailwater, 1068  
Three-Degree-of-Freedom Rigid Model for Seismic Analysis of Cracked Concrete Gravity Dams, 537
- Dams, arch**  
Effects of Environmental Action on Thermal Stress Analysis of Karaj Concrete Arch Dam, 487
- Dams, concrete**  
Structural Stability of Concrete Gravity Dams Strengthened by Rockfill Buttressing: Hydrostatic Load, 926
- Dams, earth**  
Earth Dam with Toe Drain on an Impervious Base, 50  
Estimating Slope Stability Reduction due to Rain Infiltration Mounding, 890  
Evaluation of the Movements of the Dam Embankments by Means of Geodetic and Geotechnical Methods, 1645  
Evaluation of the Parameters Influencing Self-Healing in Earth Dams, 860  
Mechanistic Model for Self-Healing of Core Cracks in Earth Dams, 861
- Dams, embankment**  
Enhanced Criterion for Base Soil Retention in Embankment Dam Filters, 929  
Evaluation of the Movements of the Dam Embankments by Means of Geodetic and Geotechnical Methods, 1645
- Dams, gravity**  
Structural Stability of Concrete Gravity Dams Strengthened by Rockfill Buttressing: Hydrostatic Load, 926
- Darcy's law**  
General Validity of Conductivity Means in Unsaturated Flow Models, 1125
- Data analysis**  
Bat Echolocation Interfering with Ultrasonic Sensors, 1069  
Damage Localization and Finite-Element Model Updating Using Multiresponse NDT Data, 172  
Data Interpretation for In Situ Measurements of Cohesive Sediment Erosion, 990  
Development of a Simple Phosphorus Model for a Large Urban Watershed: A Case Study, 642  
Effect of Heavy Multiple Axle Trucks on Flexible Pavement Damage using In-Service Pavement Performance Data, 1747  
Estimating 7Q10 Confidence Limits from Data: A Bootstrap Approach, 1821  
Examination of Level of Analysis Accuracy for Curved I-Girder Bridges through Comparisons to Field Data, 120  
Hybrid Course Linking Natural Hazards with Probability and Statistics, 1425  
Integration of Construction As-Built Data via Laser Scanning with Geotechnical Monitoring of Urban Excavation, 410  
Knowledge Discovery in a Facility Condition Assessment Database using Text Clustering, 1142  
Laboratory Simulation of Field Sampling: Comparison with Ideal Sampling and Field Data, 810
- Data processing**  
Lateral Response Evaluation of Single Piles Using Inclinometer Data, 923  
Local Geoid Improvement using GPS and Leveling Data: Case Study, 1655  
Logistic Regression Model for Evaluating Soil Liquefaction Probability using CPT Data, 843  
Multimodal Image Retrieval from Construction Databases and Model-Based Systems, 365  
Optimal Instantaneous Unit Hydrograph from Multistorm Data, 1198  
Prediction of Soil Composition from CPT Data using General Regression Neural Network, 272  
Sampled Data Feedback-Feedforward Control of Structures with Time Delays, 1549  
Statistical Considerations for Predicting Residual Value of Heavy Equipment, 359  
System-Wide Data Quality Control of Inductance Loop Data using Nonlinear Optimization, 263  
Type II Settling Data Analysis, 598  
Using Disturbance Data to Assess Vulnerability of Electric Power Delivery Systems, 1161
- Data collection**  
Application of Cement-Based Piezoelectric Sensors for Monitoring Traffic Flows, 1724  
Assignment of Seasonal Factor Categories to Urban Coverage Count Stations using a Fuzzy Decision Tree, 1735  
Evaluation of Mixing Energy in Laboratory Flasks used for Dispersant Effectiveness Testing, 593  
Hybrid Data Mining/Genetic Shredding Algorithm for Reliability Assessment of Structural Systems, 1582  
Improved AADT Estimation by Combining Information in Image- and Ground-Based Traffic Data, 1719  
Integration of Construction As-Built Data via Laser Scanning with Geotechnical Monitoring of Urban Excavation, 410  
Interpretation of Automatically Monitored Lifting Equipment Data for Project Control, 256  
Model for Automated Monitoring of Fall Hazards in Building Construction, 360  
Modeling and Analyzing the Impact of Technology on Data Capture and Transfer Processes at Construction Sites: A Case Study, 401  
Moving a Reinforced-Concrete Building: Case Study, 299  
Stochastic Streamflow Simulation using SAMS-2003, 1177  
Traffic Data Collection Requirements for Reliability in Pavement Design, 1688  
Using Global Positioning System to Improve Materials-Locating Processes on Industrial Projects, 361  
Virtual Shop Model for Experimental Planning of Steel Fabrication Projects, 281
- Data communication**  
Wavelet-Based Vibration Sensor Data Compression Technique for Civil Infrastructure Condition Monitoring, 275
- Data processing**  
3D Calculation of Stopping-Sight Distance from GPS Data, 1739  
Interpretation of Automatically Monitored Lifting Equipment Data for Project Control, 256  
Neural Networks and Principal Component Analysis for Identification of Building Natural Periods, 279

## Data processing

Overparameterized Least-Squares Adjustment with Linear Models for Geodetic and Surveying Applications, 1659

Probability Density Functions in the Analysis of Hydraulic Conductivity Data, 1116

Wavelet-Based Vibration Sensor Data Compression Technique for Civil Infrastructure Condition Monitoring, 275

## Databases

Database-Assisted Design of Low-Rise Buildings: Aerodynamic Considerations for a Practical Interpolation Scheme, 1529

Downstream Hydraulic Geometry of Alluvial Channels, 1067

Knowledge Discovery in a Facility Condition Assessment Database using Text Clustering, 1142

MACROS: Multiobjective Automated Construction Resource Optimization System, 1252

Multimodal Image Retrieval from Construction Databases and Model-Based Systems, 365

Verifications of Design Equations of Beams Externally Strengthened with FRP Composites, 213

## Datum

Coordinate Transformation between Two Geodetic Datums of Taiwan by Least-Squares Collocation, 1649

Stepwise Parameter Estimations in a Time-Variant Similarity Transformation, 1660

## Dead loads

Damage Identification Based on Dead Load Redistribution: Methodology, 1562

Damage Identification Based on Dead Load Redistribution: Effect of Measurement Error, 1563

## Debris

Case Study: Mapping Tsunami Hazards Associated with Debris Flow into a Reservoir, 931

Case Study: Numerical Simulations of Debris Flow below Stozé, Slovenia, 943

Dam Break Wave of Thixotropic Fluid, 960

Impact of Routine Quality Assurance on Reliability of Bored Piles, 835

Large Wind Missile Impact Capacity of Residential and Light Commercial Buildings, 1990

Movement of Finite Amplitude Sediment Accumulations, 1003

Three-Dimensional Topography of Debris-Flow Fan, 962

## Decision making

Considering Location, Compliance, and Storage in Decisions on Brackish Water Resource Development, 1853

Construction IT Decision Making Using Multiattribute Utility Theory for Use in a Laboratory Information Management System, 414

Contractor Selection Criteria: Investigation of Opinions of Singapore Construction Practitioners, 387

Decision Tree Modeling Using Integrated Multilevel Stochastic Networks, 412

Determining Attribute Weights in a CBR Model for Early Cost Prediction of Structural Systems, 396

Entropy Application to Improve Construction Finance Decisions, 397

Evaluation of Drinking Water Treatment Technology: An Entropy-Based Fuzzy Application, 728

## 2006 ASCE TRANSACTIONS

Infrastructure Development and Expansion under Uncertainty: A Risk-Preference-Based Lattice Approach, 350

Optimal Seismic Design Considering Risk Attitude, Societal Tolerable Risk Level, and Life Quality Criterion, 1639

Preparing for Design-Build Projects: A Primer for Owners, Engineers, and Contractors, 2081

Relative Effectiveness of Project Delivery and Contract Strategies, 288

Terrorism Risks and Blast Damage to Built Infrastructure, 1933

## Decision support systems

CB-Contract: Case-Based Reasoning Approach to Construction Contract Strategy Formulation, 284

Computer-Aided Site Layout Planning, 302

Conflict Resolution in Construction Disputes using the Graph Model, 391

Determining Attribute Weights in a CBR Model for Early Cost Prediction of Structural Systems, 396

Holistic Approach for Assessing the Vulnerability of Buried Pipelines to Earthquake Loads, 1923

Managing Irrigation for Better River Ecosystems — A Case Study of the Middle Rio Grande, 1229

Model for the Simulation of Water Flows in Irrigation Districts. I: Description, 1199

Watershed and River Systems Management Program: Overview of Capabilities, 1174

## Decks

Case Study of a High-Performance Concrete Bridge in Tennessee, 1992

## Decommissioning

The Gulf of Mexico Decommissioning Market, 369

Offshore Decommissioning Cost Estimation in the Gulf of Mexico, 313

## Decomposition

Catalytic Incineration of Acrylonitrile with Platinum Supported on  $\text{Al}_2\text{O}_3$ , 751

Domain Decomposition Method for Calculating the Failure Probability of Linear Dynamic Systems Subjected to Gaussian Stochastic Loads, 482

Modal Strain Energy Decomposition Method for Damage Localization in 3D Frame Structures, 533

## Deep water

Probability of Fatigue Failure in Steel Catenary Risers in Deep Water, 539

## Defects

Characteristics of Contractor's Liabilities for Defects and Defective Work in Korean Public Projects, 1422

Latent Building Defects: Causes and Design Strategies to Prevent Them, 1386

## Deflection

Analytical Solution for Piles Supporting Combined Lateral Loads, 899

Behavior of Buried Flexible Pipe under High Fills and Design Implications, 903

Case Study of a High-Performance Concrete Bridge in Tennessee, 1992

Critical Review of Deflection Formulas for FRP-RC Members, 206

Deflection of the Vertical Components from GPS and Precise Levelling Measurements in Hong Kong, 1654

Deflection Protection, 2032

## SUB

Det

De

St

Ener

ag

Evalu

Pr

Az

Girde

Fa

Late

Re

Long

Ex

Mod

po

14

Mon

Sh

Nine

Vi

na

On th

An

Pile

Pla

Pla

Relia

Pi

Resp

w

Stru

M

Stru

Fl

Defe

Ana

ar

er

Asse

M

Con

Cou

Se

Des

1'

Dete

N

Eff

Esti

w

Eva

m

Fin

o

Hys

1'

Ident

t

Mid

u

Mic

u

Mit

## SUBJECT INDEX

- Determination of Required Falling Weight Deflectometer Testing Frequency for Pavement Structural Evaluation at the Network Level, 1671  
Energy Capacity Criterion for the Design of Columns against Collapse, 493  
Evaluation of a GPS-Based Approach for Rapid and Precise Determination of Geodetic/Astronomical Azimuth, 1661  
Girder Differential Deflection and Distortion-Induced Fatigue in Skewed Steel Bridges, 121  
Lateral Distribution of Mixed Traffic on Two-Lane Roads, 1728  
Long-Term Deflections of Reinforced Concrete Beams Externally Bonded with FRP System, 236  
Modeling of Prestressed Concrete-Filled Circular Composite Tubes Subjected to Bending and Axial Loads, 1483  
Moment Capacities and Deflection Limits of PFRP Sheet Piles, 241  
Nine-Node Resultant-Stress Shell Element for Free Vibration and Large Deflection of Composite Laminates, 69  
On the Free Vibrations of Variable-Arc-Length Beams: Analytical and Experimental, 1517  
Pile Behavior due to Excavation-Induced Soil Movement in Clay. I: Stable Wall, 780  
Pile Behavior Due to Excavation-Induced Soil Movement in Clay. II: Collapsed Wall, 781  
Reliability Analysis of Deflection of Buried Flexible Pipes, 1754  
Response Prediction of RC Beams Externally Bonded with Steel-Reinforced Polymers, 207  
Structural Evaluation of Cement Concrete Roads in Mumbai City, 1379  
Structural Performance Monitoring of an Unstabilized Fly Ash-Based Road Subbase, 1769  
**Deformation**  
Analysis of Flexible Pavement Response and Performance using Isotropic and Anisotropic Material Properties, 1698  
Assessing Permanent Deformation Resistance of High Modulus Asphalt Mixtures, 1704  
Continuous Interface Elements Subject to Large Shear Deformations, 21  
Coupled Heat-Deformation-Flow Analysis for Clayey Soil, 826  
Design and Performance of Stone Mastic Asphalt, 1768  
Determinants of Point Displacements in the Geodetic Network, 1648  
Effect of Coarse Aggregate Morphology on Permanent Deformation Behavior of Hot Mix Asphalt, 1726  
Estimating Seismic Demands for Isolation Bearings with Building Overturning Effects, 1548  
Evaluation of the Movements of the Dam Embankments by Means of Geodetic and Geotechnical Methods, 1645  
Finite-Element Modeling of the Nonlinear Behavior of Bolted-T-Stub Connections, 1530  
Hysteretic Model of Stiffened Shear Panel Dampers, 1486  
Identification and Modeling of Permanent Deformations of Asphalt Concrete, 458  
Microscopic Evaluation of Strain Distribution in Granular Materials during Shear, 785  
Mitigation of Soil Movements from Pile Driving, 1977  
**Delivery**  
New Avenue of Achieving Ductility for Reinforced Concrete Members, 1587  
Pinned Connection Strength and Behavior, 1456  
Predictive Model for the Water Retention Curve of Deformable Clayey Soils, 881  
Seasonal Deterioration of Unsurfaced Roads, 857  
Spatial Stability of Shear Deformable Nonsymmetric Thin-Walled Curved Beams: A Centroid-Shear Center Formulation, 573  
Stress Path Testing of Realistically Cured Lime and Lime/Cement Stabilized Clay, 1288  
**Degradation**  
Degradation of a Granular Base under a Flexible Pavement: DEM Simulation, 56  
Degradation of Sands due to Combined Sinusoidal Loading, 930  
Disturbance Caused by Bed Sills on the Slopes of Steep Streams, 1052  
Effects of Ground Motion Parameters and Cyclic Degradation Behavior on Collapse Response of Steel Moment-Resisting Frames, 1592  
Fate and Modeling of Pentachlorophenol Degradation in a Laboratory-Scale Anaerobic Sludge Digester, 689  
Fatigue Analysis of RC Slabs and Repaired RC Slabs Based on Crack Bridging Degradation Concept, 1532  
Impact of Inherent Factors on the Radiolytic Degradation of Biorefractory Contaminants, 755  
Oxidative and Reductive Degradation of Mixed Contaminants by Bifunctional Aluminum, 1944  
Treating Soil PCP at Optimal Conditions using Heme and Peroxide, 678  
**Deicing**  
Calibrated Models of Deicing Agent Solids, Pavement Texture, and Specific Conductivity of Highway Runoff, 761  
**Delay time**  
Avoiding and Minimizing Construction Delay Claim Disputes in Relational Contracting, 1421  
Compaction Delay Effects on Properties of Lime-Treated Soil, 1287  
Construction Delays and Their Causative Factors in Nigeria, 354  
Construction Delays in Hong Kong Civil Engineering Projects, 352  
Delay between Sensing and Response in Water Contamination Events, 1145  
Delay Mitigation in the Malaysian Construction Industry, 300  
Influence of Pedestrians' Entry Process on Pedestrian Delays at Signal-Controlled Crosswalks, 1757  
Optimal  $H_u$  Output Feedback Control Systems with Time Delay, 549  
Time-Delayed Positive Velocity Feedback Control Design for Active Control of Structures, 503  
**Delivery**  
Comparing Procurement Methods for Design-Build Projects, 311  
Computerized System for Efficient Delivery of Infrastructure Maintenance/Repair Programs, 290  
Construction Delivery Systems: A Comparative Analysis of Their Performance within School Districts, 399

## Delivery

Improving Enrollment in the Master of Construction Management Program at Bowling Green State University, 1434

Lean Processes for Sustainable Project Delivery, 395  
Relative Effectiveness of Project Delivery and Contract Strategies, 288

## Denitrification

Combined Removal of Carbon and Nitrogen in an Integrated UASB-Jet Loop Reactor Bioreactor System, 669

Contrasting the Benefits of Primary Clarification versus Prefermentation in Activated Sludge Biological Nutrient Removal Systems, 720

Development of a Response Surface for Prediction of Nitrate Removal in Sulfur — Limestone Autotrophic Denitrification Fixed-Bed Reactors, 721

Effect of Metallic Iron Concentration on End-Product Distribution during Metallic Iron-Assisted Autotrophic Denitrification, 712

Enhancement of Denitrification in Upflow Sludge Bed Reactors with Sludge Wasting, 635

Initial Alkalinity Requirement and Effect of Alkalinity Sources in Sulfur-Based Autotrophic Denitrification Barrier System, 709

Nitrogen Transformations during Soil-Aquifer Treatment of Wastewater Effluent — Oxygen Effects in Field Studies, 732

Operational Optimization and Mass Balances in a Two-Stage MBR Treating High Strength Pet Food Wastewater, 691

Simultaneous Removal of Organic Matter and Nitrogen Compounds in Autoaerated Biofilms, 727

## Denmark

Field Monitoring of a Permeable Reactive Barrier for Removal of Chlorinated Organics, 605

Natural Gradient Tracer Test for a Permeable Reactive Barrier in Denmark. I: Field Study of Tracer Movement, 1966

Natural Gradient Tracer Test for a Permeable Reactive Barrier in Denmark. II: Spatial Moments Analysis and Dispersion of Conservative Tracer, 1967

## Density

Density and Activity Characterization of Activated Sludge Flocs, 724

Numerical Simulation of Obstructed Round Buoyant Jets in a Static Uniform Ambient, 974

Unit Weight of Municipal Solid Waste, 893

## Density currents

Circulation in Stratified Lakes due to Flood-Induced Turbidity Currents, 754

## Desalination

Modeling Water Movement and Flux from Membrane Pervaporation Systems for Wastewater Microirrigation, 714

## Deserts

Numerical Simulation of Depleted Uranium Transport in a Desert Environment using a Distributed Parameter Watershed Model, 1960

Value of Instream Recreation in the Sonoran Desert, 1806

## Design

Addressing Security in Early Stages of Project Life Cycle, 1259

## 2006 ASCE TRANSACTIONS

Airfield and Highway Pavement: Meeting Today's Challenges with Emerging Technologies, 2047

Analysis and Design Procedure for FRP-Strengthened Prestressed Concrete T-Girders Considering Strength and Fatigue, 231

Asphalt Mix Design and Construction: Past, Present, and Future, 2050

Automated People Mover Standards — Part 1 (ASCE 21-05), 2051

Behavior of Complex Hat Shapes used as Truss Chord Members, 1501

Circular Columns Confined with FRP: Experimental versus Predictions of Models and Guidelines, 189

Climate Model Simulation of Point Rainfall Frequency Characteristics, 1127

Comparison of Roles of FRP Sheets, Stirrups, and Steel Fibers in Confining Bond Critical Regions, 222

Constructability State of Practice Report, 325

Design and Evaluation of Fiber-Reinforced Polymer Bond-Type Anchorage and Ground Anchors, 29

Design Considerations for Lysimeters Used to Evaluate Alternative Earthen Final Covers, 919

Design Errors: Inefficiency or Carelessness of Designers, 1383

Design of Architectural Glazing to Resist Earthquakes, 96

Design of Circular Base Plates, 1970

Design of Slender Angle Section Beam-Columns by the Direct Strength Method, 1458

Design of Steel Transmission Pole Structures (ASCE/SEI 48-05), 2058

Dissolution of Wollastonite in a Packed Bed Contactor, 634

Energy Capacity Criterion for the Design of Columns against Collapse, 493

Experimental and Theoretical Investigations on Geocell-Supported Embankments, 14

Finite-Element Crash Test Simulation of New York Portable Concrete Barrier with I-Shaped Connector, 1481

Generic Design of V-Shape and Vane-Type Breakwaters to Reduce Green Water Load Effects on Deck Structures and Containers of Ships: Case Study, 1860

Identifying a Design Management Package to Support Concurrent Design in Building Wafer Fabrication Facilities, 348

Improving Value Generation in the Design Process of Industrial Projects using CAVT, 1243

Methodology for Usability Evaluation of Corporate Memory Design Reuse Systems, 274

New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. II: Applications, 572

Optimal Design of a Compacted Soil Liner Containing SO<sub>3</sub> Optime Amendments, 686

Pinned Connection Strength and Behavior, 1456

Procurement Routes in Public Building and Construction Projects, 356

Progressive Collapse of Structures: Annotated Bibliography and Comparison of Codes and Standards, 1407

Prototype Time-Space Diary Design and Administration for a Developing Country, 1715

Real Options by Spreadsheet: Parking Garage Case Example, 1147

## SUB

Relia...  
an...  
14...

Relia...  
De...  
Relia...  
20...

Stru...  
Di...  
Trans...  
II...

Veri...  
St...  
Visu...  
mu...

Desi...  
Desi...  
Desi...  
14...

Desi...  
Bo...  
Hybri...  
ity...

New...  
A...

Predic...  
D...

Desi...  
Desi...  
Desi...  
Desi...  
Peal...  
ti...

Desi...  
Com...  
P...

Com...  
B...

Com...  
Leg...

Prep...  
C...

Total...  
T...

Desi...  
Sel...  
V...

Det...

Stor...  
B...

Det...

Opti...  
V...

Det...

Deni...  
n...

Esti...  
E...

V...

Esti...

## SUBJECT INDEX

- Reliability, Brittleness, Covert Understrength Factors, and Fringe Formulas in Concrete Design Codes, 1439
- Reliability of Steel Dowelled Wood Connections Designed to ASCE 16-95, 1482
- Reliability-Based Design of Utility Pole Structures, 2082
- Strut-and-Tie Design Methodology for Three-Dimensional Reinforced Concrete Structures, 1531
- Transverse Pavement Grooving against Hydroplaning. II: Design, 1710
- Verifications of Design Equations of Beams Externally Strengthened with FRP Composites, 213
- Visualizing Search and Solution Spaces in the Optimum Design of Biaxial Columns, 254
- Design criteria**
- Design Criteria for Seam and Sheeting-to-Framing Connections of Cold-Formed Steel Shear Panels, 1496
- Design Factors Affecting the Flow of Water through Below-Ground Concrete Vaults, 737
- Hybrid Course Linking Natural Hazards with Probability and Statistics, 1425
- New Design Procedure for Wind Uplift Resistance of Architectural Metal Roofing Systems, 100
- Predicting End Bearing Capacity of Post-Grouted Drilled Shaft in Cohesionless Soils, 822
- Design standards**
- Design of Window Glass for Lateral Pressures, 95
- Design storms**
- Peak Discharge Estimation using Analytical Probabilistic and Design Storm Approaches, 1075
- Design/build**
- Comparing Procurement Methods for Design-Build Projects, 311
- Constructability Practices to Manage Sustainable Building Knowledge, 91
- Constructability State of Practice Report, 325
- Legal Challenge to a Best-Value Procurement System, 1906
- Preparing for Design-Build Projects: A Primer for Owners, Engineers, and Contractors, 2081
- Total Quality Performance of Design/Build Firms using Quality Function Deployment, 292
- Desorption**
- Selective Removal of Heavy Metals from Industrial Wastewater using Maghemite Nanoparticle: Performance and Mechanisms, 679
- Detention basins**
- Storm Water Detention Ponds: Modeling Heavy Metal Removal by Plant Species and Sediments, 717
- Detention reservoirs**
- Optimization of Frequency Distribution of Storm-Water Discharges for Coastal Ecosystem Restoration, 1835
- Deterioration**
- Derivation of Transition Probability Matrices for Pavement Deterioration Modeling, 1678
- Estimating Transition Probabilities in Markov Chain-Based Deterioration Models for Management of Wastewater Systems, 1802
- Estimation of Pavement Performance Deterioration using Bayesian Approach, 1144
- In-Service Durability Performance of Water Tanks, 1377
- Iterative Linear Approach for Nonlinear Nonhomogeneous Stochastic Pavement Management Models, 1689
- Markov-Based Optimization Model for Building Facilities Management, 407
- Mechanical Model for Unbonded Seven-Wire Tendon with Single Broken Wire, 576
- Optimizing Bridge Network Maintenance Management under Uncertainty with Conflicting Criteria: Life-Cycle Maintenance, Failure, and User Costs, 1620
- Performance Prediction of Bridge Deck Systems using Markov Chains, 1378
- Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Single Maintenance Type, 1537
- Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Combination of Maintenance Types, 1619
- Repeated Measurement Data Analysis in Pavement Deterioration Modeling, 1153
- Seasonal Deterioration of Unsurfaced Roads, 857
- Simple Model for Structural Evaluation of Asphalt Concrete Pavements at the Network Level, 1141
- Developing countries**
- A Cautionary Tale, 1995
- Double-Pass Photovoltaic-Thermal Solar Collector, 434
- Industrial Water Use Kuznets Curve: Evidence from Industrialized Countries and Implications for Developing Countries, 1819
- Neural Networks for Estimating the Productivity of Concreting Activities, 353
- Potential of a Combination of UASB and DHS Reactor as a Novel Sewage Treatment System for Developing Countries: Long-Term Evaluation, 601
- Prototype Time-Space Diary Design and Administration for a Developing Country, 1715
- Simplified Kernel Method for Flow to Large Diameter Wells, 1173
- Dewatering**
- Dyed Microspheres for Quantification of UV Dose Distributions: Photochemical Reactor Characterization by Lagrangian Actinometry, 742
- Field Performance of a Compacted Clay Landfill Final Cover at a Humid Site, 906
- Porosity Fluctuations in Desiccating Samples of Grout-Stabilized Soil, 1289
- Diaphragm wall**
- Innovative Central Opening Strut System for Foundation Excavation, 293
- Diesel fuels**
- Application of Fenton's Reagent to Remediate Diesel Contaminated Soils, 1941
- Systems Analysis of Technical Advancement in Earthmoving Equipment, 385
- Differential settlement**
- Effects of Soil-Structure Interaction on the Analysis of Cylindrical Tanks, 1975
- Diffraction**
- Use of Fresnel Enantiomorphic Diffraction in Surveying Laser Methods, 1650

## Diffraction

## Diffusion

### Diffusion

Estimation of Diffusion Coefficients and Solubilities for Organic Solvents Permeation through High-Density Polyethylene Geomembrane, 657

High-Density Polyethylene Membrane Containing Fe<sup>0</sup> as a Contaminant Barrier, 690

Microcosm Approach to Study Transport of Polychlorinated Biphenyls in Sediment, 676

Numerical Modeling and Analysis of Solute Velocity and Macrodispersion for Linearly and Nonlinearly Sorbing Solutes in a Single Fracture with Matrix Diffusion, 1104

Peel and Shear Fracture Characterization of Debonding in FRP Plated Concrete Affected by Moisture, 192

Porochemoelastic Solution for an Inclined Borehole in a Transversely Isotropic Formation, 510

Predicting Residual Strength in Unsaturated Concrete Exposed to Sulfate Attack, 1298

Probabilistic Service Life Assessment and Maintenance Planning of Concrete Structures, 1521

Removal of Toluene Vapor with Dispersed Activated Carbon, 622

Steady-State Diffusion — Advection by Exponential Finite Elements, 55

### Diffusivity

Aquifer Diffusivity Estimation from Response to Stream Stage Variation, 1100

### Digestion

Enhancement of Anaerobic Digestion of Excess Municipal Sludge with Thermal and/or Oxidative Treatment, 670

### Digital techniques

Automated Estimation of Average Stopped Delay at Signalized Intersections using Digitized Still-Image Analysis of Actual Traffic Flow, 258

Constriction Size of Geotextile Filters, 2

Experimental Investigation and Fracture Analysis of Debonding between Concrete and FRP Sheets, 530

Exploratory Map Animation for Post-Event Analysis of Wildfire Protective Action Recommendations, 1922

Geographic Information Systems/National Elevation Data Route Mileage Verification, 1646

Paving the Way to the Vision of Digital Construction: A Strategic Roadmap, 364

### Dikes

Laboratory Observation of Solitary Wave Propagating over a Submerged Rectangular Dike, 488

### Dilatancy

Drained and Undrained Strength Interpretation for Low-Plasticity Silts, 802

Failure and Dilatancy Properties of Sand at Relatively Low Stresses, 582

Pore Pressure Response Following Undrained uCPT Sounding in a Dilating Soil, 915

Postpeak Strength of Interfaces in a Stress-Dilatancy Framework, 914

### Dilution

Critical Analysis of Computing Equations for Determination of BOD by Dilution Methods, 651

Marine Wastewater Discharges from Multiport Diffusers. III: Stratified Stationary Water, 971

Marine Wastewater Discharges from Multiport Diffusers. IV: Stratified Flowing Water, 972

## 2006 ASCE TRANSACTIONS

### Dimensional analysis

Dimensionless Stage – Discharge Relationship in Radial Gates, 1184

Hydrodynamics of Mesotidal Estuary in Winter, 185

### Dioxin

Dioxin in Storm-Water Runoff in Houston, Texas, 770

### Disaster recovery

Disaster Recovery System Model with E-Government Case Study, 1937

### Disaster relief

Robust Mobile Ad Hoc Space for Collaboration to Support Disaster Relief Efforts Involving Critical Physical Infrastructure, 247

### Disasters

Hedgehog and Fox Strategies for Reducing Risks in Infrastructure Systems, 1935

Impacts of the 2001 World Trade Center Attack on New York City Critical Infrastructures, 1163

Three-Dimensional Topography of Debris-Flow Fan, 962

### Discharge measurement

Broad-Crested Weirs with Rectangular Compound Cross Sections, 1193

Case Study of Precision of GPS Differential Correction Strategies: Influence on aDcp Velocity and Discharge Estimates, 955

Dimensionless Stage – Discharge Relationship in Radial Gates, 1184

Electromagnetic Wave Surface Velocimetry, 946

Historic Discharge Measurements in Three Rhine Branches, 949

New Method for Estimation of Discharge, 1035

### Discontinuities

New Approach to Determine Three-Dimensional Contacts in Blocks System: Penetration Edges Method, 42

Porothermoelastic Analysis of the Response of a Stationary Crack using the Displacement Discontinuity Method, 437

### Discrete elements

Degradation of a Granular Base under a Flexible Pavement: DEM Simulation, 56

DEM-FEM Model of Highly Saturated Soil Motion Due to Seepage Force, 1892

Input Parameters of Discrete Element Methods, 506

Local Rotations in Borehole Breakouts — Observed and Modeled Stress Field Rotations and Their Implications for the Petroleum Industry, 52

Rotation Response of a Rigid Body under Seismic Excitation, 472

Shear Banding in Sandstone: Physical and Numerical Studies, 31

Visualization of Crushing Evolution in Granular Materials under Compression using DEM, 32

### Discrimination

Indirect Discrimination in Construction Organizations and the Impact on Women's Careers, 1250

### Disinfection

Comparative Inactivation of *Bacillus Subtilis* Spores and MS-2 Coliphage in a UV Reactor: Implications for Validation, 760

## SUBJECT INDEX

- Disinfection By-Product Formation during Long-Term Water Storage in Alaska, 188  
Evaluation of Drinking Water Treatment Technology: An Entropy-Based Fuzzy Application, 728  
Impact of Particle Aggregated Microbes on UV Disinfection. I: Evaluation of Spore — Clay Aggregates and Suspended Spores, 666  
Impact of Particle Aggregated Microbes on UV Disinfection. II: Proper Absorbance Measurement for UV Fluence, 667  
Iron Oxide Enhanced Chlorine Decay and Disinfection By-Product Formation, 767  
MS2 Inactivation by Chloride-Assisted Electrochemical Disinfection, 584  
Polychromatic UV Fluence Measurement using Chemical Actinometry, Biodosimetry, and Mathematical Techniques, 693
- Dispersion**  
Analytical Study of Turbulent Pollutant Dispersion near a Low Hill, 444  
Asymptotic Solutions for One-Dimensional Dispersion in Rivers, 940  
Comparison of SF<sub>6</sub> and Fluorescein as Tracers for Measuring Transport Processes in a Large Tidal River, 774  
Evaluation of Dispersion Coefficients in Meandering Channels from Transient Tracer Tests, 1033  
Generalized Fick's Law and Fractional ADE for Pollution Transport in a River: Detailed Derivation, 1079
- Displacement**  
Antiplane (SH) Waves Diffraction by a Semicircular Cylindrical Hill Revisited: An Improved Analytic Wave Series Solution, 550  
Automatically Computing the Displacements and Stresses Induced by Three-Dimensional Arbitrarily Shaped Loads in a Transversely Isotropic Medium, 18  
Behavior of a Fiber-Reinforced Bentonite at Large Shear Displacements, 918  
Behavior of Steel Double-Channel Built-Up Chords of Special Truss Moment Frames under Reversed Cyclic Bending, 1571  
Blast and Construction Vibration Monitoring and Control: Thirty-Five-Year Perspective, 1971  
Damage Assessment in Beams using Inverse Method, 469  
Determination of Point Displacements in the Geodetic Network, 1648  
Displacement-Based Design of Supplemental Dampers for Seismic Retrofit of a Framed Structure, 1526  
Displacements and Stresses Due to a Uniform Vertical Circular Load in an Inhomogeneous Cross-Anisotropic Half-Space, 12  
Evaluation of Distress in Supports of Hyperbolic Paraboloid Shell, 1364  
Evaluation of the Movements of the Dam Embankments by Means of Geodetic and Geotechnical Methods, 1645  
Experimental Verification and Full-Scale Deployment of Global Positioning System to Monitor the Dynamic Response of Tall Buildings, 1561  
Ground Movement Predictions for Braced Excavations in Undrained Clay, 821  
Mitigation of Soil Movements from Pile Driving, 1977

## Distribution functions

- Nonlinear Stiffness Design Optimization of Tall Reinforced Concrete Buildings under Service Loads, 1536  
Observations on the Reliability of Alternative Multiple-Mode Pushover Analysis Methods, 1485  
Porothermoelastic Analysis of the Response of a Stationary Crack using the Displacement Discontinuity Method, 437  
Robustness Analysis of Two-Dimensional Networks, 1664  
Use of Modal Flexibility for Damage Detection and Condition Assessment: Case Studies and Demonstrations on Large Structures, 1607
- Dispute resolution**  
Avoiding and Minimizing Construction Delay Claims in Relational Contracting, 1421  
Conflict Resolution in Construction Disputes using the Graph Model, 391  
The Effective Mediator, 1435  
Logistic Likelihood Analysis of Mediation Outcomes, 389  
MAUT-Based Dispute Resolution Selection Model Prototype for International Construction Projects, 332  
Preventing Disputes with Empathy, 1430  
Progress of Statutory Adjudication as a Means of Resolving Disputes in Construction in the United Kingdom, 1426  
Quantification of Costs for Dispute Resolution Procedures in the Construction Industry, 1429  
A Study of Styles and Outcomes in Construction Dispute Negotiation, 368  
Utilizing Dispute Review Boards in Relational Contracting: A Case Study, 1436
- Dissolved organic carbon**  
EDTA, NTA, Alkylphenol Ethoxylate and DOC Attenuation during Soil Aquifer Treatment, 674  
Lime-Soda Softening Process Modifications for Enhanced NOM Removal, 600
- Dissolved oxygen**  
Artificial Neural Network Modeling of Dissolved Oxygen in a Wetland Pond: The Case of Hovi, Finland, 1090  
Comparative Absorption of Crude Oil from Fresh and Marine Water using Recycled Rubber, 723  
Integrated Hydrodynamic and Water Quality Modeling System to Support Nutrient Total Maximum Daily Load Development for Wissahickon Creek, Pennsylvania, 644  
Jackson River Modeling: 50-Year Perspective, 719  
Long-Term Dynamic Modeling Approach to Quantifying Attached Algal Growth and Associated Impacts on Dissolved Oxygen in the Lower Truckee River, Nevada, 739  
Multiobjective Optimal Waste Load Allocation Models for Rivers using Nondominated Sorting Genetic Algorithm-II, 1814  
Response of a Tropical Reservoir to Bubbler Desratification, 682
- Distribution functions**  
Optimization of Investments in Natural Gas Distribution Networks, 425  
Shear Live-Load Distribution Factors for J-Girder Bridges, 124

## Ditches

### Ditches

Seepage from a Rectangular Ditch to the Groundwater Table, 1192

### Documentation

In-Service Durability Performance of Water Tanks, 1377

### Dolomite

Initial Alkalinity Requirement and Effect of Alkalinity Sources in Sulfur-Based Autotrophic Denitrification Barrier System, 709

### Domes, structural

Membrane Analysis and Minimum Weight Design of Submerged Spherical Domes, 1463

Shape Selection for Lattice Structures, 1608

### Drafting

Approaches to Improving the Quality of Construction Drawings from Owner's Perspective, 405

### Drag

Drag Force on Single Piles in Clay Subjected to Surcharge Loading, 20

Probability Density Function of Instantaneous Drag Forces and Shear Stresses on a Bed, 1050

### Drainage

Climate Model Simulation of Point Rainfall Frequency Characteristics, 1127

Combination Subsurface Irrigation and Drainage Systems in North-Central South Dakota, 1169

Combined Hydraulic and Black-Box Models for Flood Forecasting in Urban Drainage Systems, 1131

Considerations from the Design of Intercepting Drainage for Collecting Water from Seep Areas, 1231

Double Strain Softening and Diagonally Crossing Shear Bands of Sand in Drained Triaxial Tests, 57

Downstream Economic Benefits of Conservation Development, 1804

Earth Dam with Toe Drain on an Impervious Base, 50

Effect of Controlled Drainage and Vegetative Buffers on Drainage Water Quality from Wastewater Irrigated Fields, 1182

Field Study to Investigate WIDE Technology for TCE Extraction, 880

Installation of Horizontal Wells in Landfilled Waste using Directional Drilling, 859

Optimal Layout of Sewer Systems: A Deterministic versus a Stochastic Model, 1018

Physics of Liquefaction Phenomena around Marine Structures, 1877

Rational Approach for Base Type Selection, 1746

Seepage to a Drainage Ditch and Optimization of Its Shape, 1234

Standard Guidelines for the Design of Urban Subsurface Drainage (ASCE/EWRI 12-05); Standard Guidelines for the Installation of Urban Subsurface Drainage (ASCE/EWRI 13-05); and Standard Guidelines for the Operation and Maintenance of Urban Subsurface Drainage (ASCE/EWRI 14-05), 2090

Stress-Controlled Filtration with Compressible Particles, 858

Updating Rainfall IDF Relationships to Maintain Urban Drainage Design Standards, 1123

Vertical Drain Consolidation with Parabolic Distribution of Permeability in Smear Zone, 866

## 2006 ASCE TRANSACTIONS

### Drainage systems

Application of Lean Concepts and Simulation Analysis to Improve Efficiency of Drainage Operations Maintenance Crews, 317

### Drawdown

Installation of Horizontal Wells in Landfilled Waste using Directional Drilling, 859

Simplified Kernel Method for Flow to Large Diameter Wells, 1173

### Dredge spoil

Solidification of New Zealand Harbor Sediments using Cementitious Materials, 1294

### Drift

Adaptive Modal Combination Procedure for Nonlinear Static Analysis of Building Structures, 1609

Damping in Shear Beam Structures and Estimation of Drift Response, 522

Generalized Interstory Drift Spectrum, 1523

More Efficient Seismic Loading for Multidegrees of Freedom Structures, 1604

### Drilled pier foundations

Cyclic Lateral Load Response of Bridge Column-Foundation-Soil Systems in Freezing Conditions, 1611

### Drilled shafts

Influence of Torque on Lateral Capacity of Drilled Shafts in Sands, 820

Predicting End Bearing Capacity of Post-Grouted Drilled Shaft in Cohesionless Soils, 822

A Robust Macromechanical Model for Soil — Pile Interaction under Cyclic Loads, 898

### Drilling

Development of Tensile Hoop Stress during Horizontal Directional Drilling through Sand, 48

Installation of Horizontal Wells in Landfilled Waste using Directional Drilling, 859

Legal Consequences of Damages to Underground Facilities by Horizontal Directional Drilling, 1437

Quantifying the Effect of Rock Strength Criteria on Minimum Drilling Mud Weight Prediction using Polyaxial Rock Strength Test Data, 38

### Driven piles

Behavior of Axially Loaded Pile Groups Driven in Clayey Silt, 814

Quality Control Method for Pile Driving, 879

### Driver behavior

Collecting Driving Data to Support Mobile Source Emissions Estimation, 1756

Modeling Driver Visual Demand on Three-Dimensional Highway Alignments, 1700

Relationship between Speed, Lateral Placement, and Drivers' Eye Movement at Two-Lane Rural Highways, 1734

### Drop structures

Experimental Study of Flow in a Vortex Drop Shaft, 937

Modeling Ventilation Phenomenon in Sanitary Sewer Systems: A System Theoretic Approach, 1008

### Droughts

Analyses of Drought Flow in Recession Period, 1085

Developing Multiple Indicators and Triggers for Drought Plans, 1817

## SUBJECT INDEX

- Drought Storage Allocation Rules for Surface Reservoir Systems, 1842  
Integrated Economic, Hydrologic, and Institutional Analysis of Policy Responses to Mitigate Drought Impacts in Rio Grande Basin, 1851  
Nonparametric Approach for Bivariate Drought Characterization using Palmer Drought Index, 1084  
**Ductility**  
Analysis of Finite Strain Anisotropic Elastoplastic Fracture in Thin Plates and Shells, 81  
Behavior and Design of Commercial Multistory Buildings Subjected to Blast, 1398  
Behavior and Modeling of Fiber Reinforced Polymer-Confining Concrete, 9  
Design Criteria for Seam and Sheetings-to-Framing Connections of Cold-Formed Steel Shear Panels, 1496  
Ductile Web Fracture Initiation in Steel Shear Links, 1556  
Flexural Load Testing of Concrete-Filled FRP Tubes with Longitudinal Steel and FRP Rebar, 204  
Moment Redistribution in FRP and Steel-Plated Reinforced Concrete Beams, 200  
More Efficient Seismic Loading for Multidegrees of Freedom Structures, 1604  
New Avenue of Achieving Ductility for Reinforced Concrete Members, 1587  
Performance of Structures before and during Failure, 1972  
Seismic Performance of Concrete-Filled FRP Tube Columns for Bridge Substructure, 139  
Stability and Ductility of Thin-Walled Circular Steel Columns under Cyclic Bidirectional Loading, 1599  
Tests on the Ductility of Reinforced Concrete Beams Retrofitted with FRP and Steel Near-Surface Mounted Plates, 199  
Use of Fiber-Reinforced Polymer Composite Elements to Enhance Structural Steel Member Ductility, 223  
**Dunes**  
Large-Eddy Simulation of Turbulent Flow over a Fixed Two-Dimensional Dune, 996  
Lateral Variations in Suspended Sediment Concentration over Dunes, 1066  
Transition from Ripples to Dunes, 1063  
**Durability**  
Chemomechanical Assessment of Beams Damaged by Alkali-Silica Reaction, 1317  
Double-Layer Prefabricated FRP Grids for Rapid Bridge Deck Construction: Case Study, 208  
Durability of FRP Composite Bridge Deck Materials under Freeze-Thaw and Low Temperature Conditions, 147  
Durability Prediction for GFRP Reinforcing Bars using Short-Term Data of Accelerated Aging Tests, 216  
Environmental Effects on Epoxy Adhesives Employed for Restoration of Historical Buildings, 1344  
Influence of Compactive Efforts on Lime-Slag Treated Tropical Black Clay, 1280  
Investigations on the Static Behavior of Self-Compacting Concrete Under-Reamed Piles, 1305  
Predicting Residual Strength in Unsaturated Concrete Exposed to Sulfate Attack, 1298  
Probabilistic Service Life Assessment and Maintenance Planning of Concrete Structures, 1521

## Dynamic loads

- Short and Medium Term Durability Evaluation of FRP-Confining Circular Concrete, 212  
Tensile Strength Bearing Ratio and Slake Durability of Class F Fly Ash Stabilized with Lime and Gypsum, 1263  
**Dust**  
Evaluation of Dust Palliatives for Unpaved Roads in Arid Climates, 1394  
Metallic Characterization of Foundry By-Products per Waste Streams and Leaching Protocols, 665  
**Dyes**  
Applicability of Equilibrium Isotherm Models for the Biosorptive Uptakes in Comparison to Activated Carbon-Based Adsorption, 764  
Comparison of SF<sub>6</sub> and Fluorescein as Tracers for Measuring Transport Processes in a Large Tidal River, 774  
Electrolytic Treatment of Azo Dye Wastewaters: Impact of Matrix Chloride Content, 656  
Evaluation of Decolorization, Mineralization, and Toxicity Reduction of an Azo Dye C.I. Reactive Black 5 in a Counter-current Bubble Column by Ozone, 1940  
Fenton and Electro-Fenton Methods for Oxidation of H-Acid and Reactive Black 5, 624  
**Dynamic analysis**  
3D FE Analysis of Flexible Pavement with Geosynthetic Reinforcement, 1705  
Accurate Representation of External Force in Time History Analysis, 438  
Blaschke Assessment of Load-Bearing Reinforced Concrete Shear Walls, 1982  
Comparison of Various Procedures for Progressive Collapse Analysis, 1402  
Damage and Damage Prediction for Wood Shearwalls Subjected to Simulated Earthquake Loads, 1381  
Effect of Vehicle Velocity on the Dynamic Amplification of a Vehicle Crossing a Simply Supported Bridge, 128  
Effect of Vehicle Velocity on the Dynamic Amplification of Two Vehicles Crossing a Simply Supported Bridge, 129  
Explicit Integration Method for Extended-Period Simulation of Water Distribution Systems, 969  
Modeling the Impact of Failed Members for Progressive Collapse Analysis of Frame Structures, 1403  
New Approach for Seismic Nonlinear Analysis of Inelastic Framed Structures, 535  
Progressive Collapse of Structures: Annotated Bibliography and Comparison of Codes and Standards, 1407  
Seismic Reliability of Low-Rise Nonsymmetric Wood-frame Buildings, 1513  
Strain Rate Model for Dynamic Analysis of Reinforced Concrete Structures, 1576  
Three-Dimensional Indirect Boundary Element Method Formulation for Dynamic Analysis of Frames Buried in Semi-infinite Elastic Media, 536  
**Dynamic characteristics**  
Approximate Floor Acceleration Demands in Multistory Buildings. I: Formulation, 6  
Dynamic Behavior of Nonlinear Cable System. IV, 464  
Only Dynamics Can Absorb Dynamics, 403  
**Dynamic loads**  
Accurate Representation of External Force in Time History Analysis, 438

## Dynamic loads

- Energy Evaluation for Ramberg — Osgood Hysteretic Model, 529  
Fatigue Damage of Steel Bridges Due to Dynamic Vehicle Loads, 135  
Influence of Electrochemical Chloride Extraction on the Performance of Prestressed Concrete under Dynamic Loading Conditions, 1355  
New Method to Evaluate the Nailing Performance of Extruded High-Performance Fiber-Reinforced Cementitious Composites for Residential Applications, 1309  
Short-Term Structural Instability under Random Dynamic Loads, 568  
Visualization of Crushing Evolution in Granular Materials under Compression using DEM, 32
- Dynamic models**
- Compilation of a Map of Recent Vertical Crustal Movements in Eastern Canada using Geographic Information System, 1663  
Continuum Modeling of an Innovative Space-Based Radar Antenna Truss, 79  
Long-Term Dynamic Modeling Approach to Quantifying Attached Algal Growth and Associated Impacts on Dissolved Oxygen in the Lower Truckee River, Nevada, 739  
On the Comparison of Timoshenko and Shear Models in Beam Dynamics, 554  
Optimization of an Unstructured First-Order Kinetics Model of Cyclically Operated Bioreactors, 649  
Simple Dynamic Model for Fender Pile Analysis and Design, 1895  
Simplified Model for Vertical Vibrations of Surface Foundations, 838
- Dynamic properties**
- Neural Networks and Principal Component Analysis for Identification of Building Natural Periods, 279
- Dynamic response**
- Determination of Honeycomb Material Properties: Existing Theories and an Alternative Dynamic Approach, 74  
Dynamic Ratcheting in Elastoplastic Single-Degree-of-Freedom Systems, 475  
Dynamic Response of Closed-Loop System with Uncertain Parameters using Interval Finite-Element Method, 520  
Electroelastic Response of a Laminated Composite Plate with Piezoelectric Sensors and Actuators, 526  
Experimental Verification and Full-Scale Deployment of Global Positioning System to Monitor the Dynamic Response of Tall Buildings, 1561  
Force Identification Based on Sensitivity in Time Domain, 544  
Generalized Bouc-Wen Model for Highly Asymmetric Hysteresis, 495  
Innovative Bridge Condition Assessment from Dynamic Response of a Passing Vehicle, 579  
Investigation of Foundation Vibrations Resting on a Layered Soil System, 789  
Modified Sturm Sequence Property for Damped Systems, 515  
More Efficient Seismic Loading for Multidegrees of Freedom Structures, 1604  
New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. II: Applications, 572

## 2006 ASCE TRANSACTIONS

- Probabilistic Critical Excitation Method for Earthquake Energy Input Rate, 538  
Response of Nonstructural Components in Structures with Damping Systems, 1547  
Size Effects and the Dynamic Response of Plain Concrete, 1315  
Structural Damage Detection from Wavelet Coefficient Sensitivity with Model Errors, 547  
Unloading and Reloading Stress - Strain Model for Confined Concrete, 1449  
Validating Wind-Induced Response of Tall Buildings: Synopsis of the Chicago Full-Scale Monitoring Program, 1588
- Dynamic stability**
- Numerical Simulations of Dynamic Instability of Elastic-Plastic Beams, 461
- Dynamic structural analysis**
- Application of Internally Damped Shearbeam Model to Analysis of Buildings under Earthquakes: Robust Procedure for Quick Evaluation of Seismic Performance, 1550
- Dynamic tests**
- Comparison of Tests of a Nonlinear Structure using a Shake Table and the EFT Method, 1584  
Correlation between Cyclic Resistance Ratios of Intact and Reconstituted Offshore Saturated Sands and Silts with the Same Shear Wave Velocity, 924  
Degradation of Sands due to Combined Sinusoidal Loading, 930  
Dynamic Characteristics and Effective Stiffness Properties of Honeycomb Composite Sandwich Structures for Highway Bridge Applications, 203  
Effects of Connection Fractures on Global Behavior of Steel Moment Frames Subjected to Earthquakes, 1447  
Event-Driven Control System for Geographically Distributed Hybrid Simulation, 1446  
Experimental Evaluation of Dynamic Effects for a Selected Highway Bridge, 1391  
Fundamental Frequency Testing of Reinforced Concrete Beams, 1384  
Granular Material Silos under Dynamic Excitation: Numerical Simulation and Experimental Validation, 1594  
Impact of Specimen Geometry on Dynamic Modulus Measurement Test Setup, 1314  
New Design Procedure for Wind Uplift Resistance of Architectural Metal Roofing Systems, 100  
Overview of Vibrational Structural Health Monitoring with Representative Case Studies, 174  
Stiffness Assessment through Modal Analysis of an RC Slab Bridge before and after Strengthening, 162  
Vibration Performance of a Large Cantilever Grandstand during an International Football Match, 1385
- Dynamics**
- Experimental Study of Ice Jam Formation Dynamics, 186  
Multiphase/Multidomain Computations using Continuum and Lattice — Boltzmann Methods, 84  
New Approach to Mission Design Based on the Fundamental Equations of Motion, 65  
Revisiting Multimode Coupled Bridge Flutter: Some New Insights, 551  
Rotation Response of a Rigid Body under Seismic Excitation, 472

## SUBJECT INDEX

Use of Modal Flexibility for Damage Detection and Condition Assessment: Case Studies and Demonstrations on Large Structures, 1607

### Earth pressure

Behavior of Buried Flexible Pipe under High Fills and Design Implications, 903

Cyclic Lateral Load Behavior of a Pile Cap and Backfill, 883

Design of a Rigid Cutoff Wall, 34

Passive Earth Pressure Mobilization during Cyclic Loading, 884

Performance of a Cantilever Retaining Wall, 875

Validation of Shoring Made of HDPE Pipe or CGS Pipe Normally Used for Culverts and Sewers, 1974

### Earthquake engineering

Active Control with Optical Fiber Sensors and Neural Networks. I: Theoretical Analysis, 1566

Active Control with Optical Fiber Sensors and Neural Networks. II: Experimental Verification, 1567

Adaptive Modal Combination Procedure for Nonlinear Static Analysis of Building Structures, 1609

Comparison of Tests of a Nonlinear Structure using a Shake Table and the EFT Method, 1584

Effects of Connection Fractures on Global Behavior of Steel Moment Frames Subjected to Earthquakes, 1447

Fourway: Graphical Tool for Performance-Based Earthquake Engineering, 1564

Generalized Bouc – Wen Model for Highly Asymmetric Hysteresis, 495

Liquefaction, Cyclic Mobility, and Failure of Silt, 845

New Measure for Severity of Near-Source Seismic Ground Motion, 1636

New Three-Dimensional Damage Index for RC Buildings with Planar Irregularities, 1585

Observations on the Reliability of Alternative Multiple-Mode Pushover Analysis Methods, 1485

Optimal  $H_m$  Output Feedback Control Systems with Time Delay, 549

Plastic Hinge Integration Methods for Force-Based Beam — Column Elements, 1462

Seismic Evaluation of Steel Moment Frame Buildings Designed using Different  $R$ -Values, 1583

Seismic Fragility Analysis of Structural Systems, 473

Seismic Response and Damage Detection Analyses of an Instrumented Steel Moment-Framed Building, 1591

Three-Degree-of-Freedom Rigid Model for Seismic Analysis of Cracked Concrete Gravity Dams, 537

Time-Delayed Positive Velocity Feedback Control Design for Active Control of Structures, 503

### Earthquake loads

Granular Material Silos under Dynamic Excitation: Numerical Simulation and Experimental Validation, 1594

Holistic Approach for Assessing the Vulnerability of Buried Pipelines to Earthquake Loads, 1923

Joint First-Passage Probability and Reliability of Systems under Stochastic Excitation, 441

Reliability of Shallow Foundations Subjected to Multidirectional Seismic Loading, 842

## Earthquakes

### Earthquake resistant structures

Application of Internally Damped Shearbeam Model to Analysis of Buildings under Earthquakes: Robust Procedure for Quick Evaluation of Seismic Performance, 1550

Behavior of Reinforced Concrete Column — Steel Beam Roof Level T-Connections under Displacement Reversals, 1540

A Cautionary Tale, 1995

Inelastic Spectrum-Based Approach for Seismic Design Spectra, 1565

Seismic Behavior of Sheathed Cold-Formed Structures: Numerical Study, 1494

Seismic-Resistant Weld-Free Steel Frame Buildings with Mechanical Joints and Hysteretic Dampers, 1525

### Earthquakes

Assessment of the Liquefaction Susceptibility of Fine-Grained Soils, 885

Best Practices of Bridge System Management—A Synthesis, 1258

A Cautionary Tale, 1995

CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, 873

Damage and Damage Prediction for Wood Shearwalls Subjected to Simulated Earthquake Loads, 1381

Design of Architectural Glazing to Resist Earthquakes, 96

Determining Equivalent Linear Parameters for Use in a Capacity Spectrum Method of Analysis, 1445

Development of Real-Time Safety Control System for Urban Gas Supply Network, 801

Development, Shake Table Testing, and Design of FRP Seismic Restrainers, 152

Displacement-Based Design of Supplemental Dampers for Seismic Retrofit of a Framed Structure, 1526

Earthquake Hydrodynamic Pressure on Dams, 1046

Effects of Pier and Deck Flexibility on the Seismic Response of Isolated Bridges, 115

First-Order Reliability Method for Probabilistic Liquefaction Triggering Analysis using CPT, 809

General Approach for Training Back-Propagation Neural Networks in Vibration Control of Multidegree-of-Freedom Structures, 269

HAZUS Earthquake Loss Estimation Methods, 1927

Improved Image Analysis for Evaluating Concrete Damage, 265

Learning Seismic Design from the Earthquake Itself, 1986

Liquefaction Hazard Mapping—Statistical and Spatial Characterization of Susceptible Units, 844

Liquefaction Susceptibility Criteria for Silts and Clays, 908

Liquefaction-Induced Lateral Spreading in Near-Fault Regions during the 1999 Chi-Chi, Taiwan Earthquake, 922

Modal Seismic Control of Building Frames by Artificial Neural Network, 252

Modeling Steel Frame Buildings in Three Dimensions. I: Panel Zone and Plastic Hinge Beam Elements, 470

Modeling Steel Frame Buildings in Three Dimensions. II: Elastofiber Beam Element and Examples, 471

Orthogonal Effects in Seismic Analysis of Skewed Bridges, 116

## **Earthquakes**

- Performance and Analyses of Mechanically Stabilized Earth Walls in the Tecomán, Mexico Earthquake, 1395  
Prediction of Ductile Fracture in Steel Connections using SMCS Criterion, 1455  
Probabilistic Critical Excitation Method for Earthquake Energy Input Rate, 538  
Residual Performance of FRP-Retrofitted RC Columns after being Subjected to Cyclic Loading Damage, 219  
Return Period of Recorded Ground Motion, 1522  
Rotation Response of a Rigid Body under Seismic Excitation, 472  
Seismic Behavior of High-Strength Concrete Columns Confined by Fiber-Reinforced Polymer Tubes, 243  
Seismic Performance of Industrial Facilities Affected by the 1999 Turkey Earthquake, 1367  
Seismic Response and Damage Detection Analyses of an Instrumented Steel Moment-Framed Building, 1591  
Seismic Response of High Voltage Electrical Transformer-Bushing Systems, 1467  
Shaking Table Test of a 1:20 Scale High-Rise Building with a Transfer Plate System, 1610  
Site-Specific Validation of Random Vibration Theory-Based Seismic Site Response Analysis, 863  
Standard Penetration Test-Based Probabilistic and Deterministic Assessment of Seismic Soil Liquefaction Potential, 10  
Static and Cyclic Racking Performance of Autoclaved Aerated Concrete Cladding Panels, 86  
Strength Loss and Localization at Silt Interlayers in Slopes of Liquefied Sand, 7  
Stress Reduction Coefficient and Amplification Factor for Seismic Response of Ground, 26  
Structural Stability of Concrete Gravity Dams Strengthened by Rockfill Buttressing: Hydrostatic Load, 926
- Earthwork**  
Innovations in Earthmoving Equipment: New Forms and Their Evolution, 386  
Systems Analysis of Technical Advancement in Earthmoving Equipment, 385
- Eccentric loads**  
Design of Circular Base Plates, 1970  
High-Strength Concrete Columns under Eccentric Load, 1541
- Eccentricity**  
Influence of Hopper Eccentricity on Discharge of Cylindrical Mass Flow Silos with Rigid Walls, 542
- Ecology**  
Achievement of 100% Removal of Oil from Feathers Employing Magnetic Particle Technology, 661  
Managing Irrigation for Better River Ecosystems — A Case Study of the Middle Rio Grande, 1229  
Model for Environmental Risk Assessment of Tourism Project Construction on the Egyptian Red Sea Coast, 729  
Opportunity Costs of Residential Best Management Practices for Stormwater Runoff Control, 1810  
Optimization of Frequency Distribution of Storm-Water Discharges for Coastal Ecosystem Restoration, 1835

## **2006 ASCE TRANSACTIONS**

- Predicting the Performance of Activated Carbon-, Coke-, and Soil-Amended Thin Layer Sediment Caps, 688  
**Economic factors**  
Arsenic Removal from Water by Moving Bed Active Filtration, 583  
Combination Subsurface Irrigation and Drainage Systems in North-Central South Dakota, 1169  
Downstream Economic Benefits of Conservation Development, 1804  
Economic Heuristic Optimization for Heterogeneous Fleet VRPHESTW, 1694  
Economic Optimization of Conjunctive Use of Surface Water and Groundwater at the Basin Scale, 1848  
Economic Value of Building Faster, 363  
Economically Driven Simulation of Regional Water Systems: Friant-Kern, California, 1849  
Economic-Based Optimization of Panama Canal System Operations, 1852  
Evaluating the Impact of Vessel-Traffic Interference on Container Terminal Capacity, 1862  
Evaluation of the Trans-Texas Corridor Proposal: Application and Enhancements of the Random-Utility-Based Multiregional Input — Output Model, 1720  
Exploring the Bidding Situation for Economically Most Advantageous Tender Projects using a Bidding Game, 390  
Generalized Economic Modeling for Infrastructure and Capital Investment Projects, 1139  
Industrial Water Use Kuznets Curve: Evidence from Industrialized Countries and Implications for Developing Countries, 1819  
Integrated Economic, Hydrologic, and Institutional Analysis of Policy Responses to Mitigate Drought Impacts in Rio Grande Basin, 1851  
Methodology to Develop Median Barrier Warrant Criteria, 1691  
Modeling and Analysis of the Link between Accessibility and Employment Growth, 1703  
Relationship between Housing Affordability and Economic Development in Mainland China — Case of Shanghai, 1779  
Statistical Considerations for Predicting Residual Value of Heavy Equipment, 359  
Transportation System Sustainability Issues in High-, Middle-, and Low-Income Economies: Case Studies from Georgia (U.S.), South Korea, Colombia, and Ghana, 1793
- Economic models**  
Calibrating Holistic Water Resources — Economic Models, 1844  
Economic Analysis of an Irrigation System for Liquid Manure Application, 1208
- Ecuador**  
Irrigation Potential of the TRASVASE System (Santa Elena Peninsula, Guayas, Ecuador), 1215
- Eddy viscosity**  
Modeling Near-Shore Waves, Surface Rollers, and Underflow Velocity Profiles, 1896
- Edge effect**  
Complex Edge Stiffeners for Thin-Walled Members, 1459

## SUBJECT INDEX

- Education-practice interchange**  
Educational Architecture-Oriented Software Linking Conceptual Design and Solar Intensity, 93
- Effective stress**  
Hysteresis of Matrix Suction and Capillary Stress in Monodisperse Disk-Shaped Particles, 490
- Online Earthquake Response Test for Stratified Layers of Clay and Sand, 834
- Efficiency**  
Experimental Data and Theoretical Analysis of Particle Removal Efficiency in a Novel Hydraulic Separation Unit, 733
- Effluents**  
Aerated Rock Filters for Enhanced Ammonia and Fecal Coliform Removal from Facultative Pond Effluents, 646
- Density and Activity Characterization of Activated Sludge Flocs, 724
- Economic Analysis of an Irrigation System for Liquid Manure Application, 1208
- EDTA, NTA, Alkylphenol Ethoxylate and DOC Attenuation during Soil Aquifer Treatment, 674
- Global Behaviors of a Round Buoyant Jet in a Countercurrent, 991
- Heavy Metals Removal from Acidic and Saline Soil Leachate using Either Electrochemical Coagulation or Chemical Precipitation, 660
- Egypt**  
Model for Environmental Risk Assessment of Tourism Project Construction on the Egyptian Red Sea Coast, 729
- Eigenvalues**  
Modified Sturm Sequence Property for Damped Systems, 515
- Elastic analysis**  
Effects of Environmental Action on Thermal Stress Analysis of Karaj Concrete Arch Dam, 487
- Elastic foundations**  
Effects of Soil-Structure Interaction on the Analysis of Cylindrical Tanks, 1975
- Stiffness of a Flexible Circular Footing Embedded in an Elastic Half-Space, 16
- Elasticity**  
Active Thrust Due to Backfill Subject to Lines of Surcharge, 805
- Analytical Stress — Strain Relationship for Concrete Confined by Steel Stirrups and/or FRP Jackets, 1577
- Anisotropic Nonlinear Elastic Model for Particulate Materials, 874
- Difference between In Situ Flexible Pavement Measured and Calculated Stresses and Strains, 1725
- Effective Moduli of Coated Particulate Composites with BCC Structure at High Concentration, 525
- Efficient Computation of Response Sensitivities for Inelastic Structures, 1464
- Elastic Buckling of Laminated Conical Shells Using a Hierarchical High-Fidelity Analysis Procedure, 575
- Finite-Element Analysis of Hot Mix Asphalt Microstructure using Effective Local Material Properties and Strain Gradient Elasticity, 451
- "Giant Superelasticity Effect" in NiTi Superelastic Materials and Its Applications, 1360
- Mechanical Grading of Round Timber Beams, 1261
- Electrical conductivity**  
Moisture Effects on Elastic and Viscoelastic Properties of CFRP Rebars and Vinyl Ester Binder, 1340
- Postbuckling of Elastic Columns with Second-Mode Imperfection, 527
- Stress Reduction Coefficient and Amplification Factor for Seismic Response of Ground, 26
- Symmetric Catenary of a Uniform Elastic Cable of Neo-Hookean Material, 509
- Three-Dimensional Indirect Boundary Element Method Formulation for Dynamic Analysis of Frames Buried in Semiinfinite Elastic Media, 536
- Elastoplasticity**  
3D FEM Analysis of Flexible Pavement with Geosynthetic Reinforcement, 1705
- Analysis of Deep Moisture Barriers in Expansive Soils. I: Constitutive Model Formulation, 43
- Analysis of Finite Strain Anisotropic Elastoplastic Fracture in Thin Plates and Shells, 81
- Dynamic Ratcheting in Elastoplastic Single-Degree-of-Freedom Systems, 475
- Elastoplastic Damage Modeling in Unsaturated Rocks and Applications, 23
- General Formulation of Two Kinematic Hardening Constitutive Models with a Smooth Elastoplastic Transition, 41
- Microstructure and Compactive Instabilities of a Stabilized Residue, 1290
- New Stabilized Finite Element Method Embedded with a Cap Model for the Analysis of Granular Materials, 460
- Numerical Simulations of Dynamic Instability of Elastic-Plastic Beams, 461
- Single Hardening Elasto-Plastic Model for Kaolin Clay with Loading-History-Dependent Plastic Potential Function, 17
- Strain Localization in Combined Axial-Torsional Testing on Kaolin Clay, 489
- Electric power outages**  
Using Disturbance Data to Assess Vulnerability of Electric Power Delivery Systems, 1161
- Electric power supply**  
Assessing the Financial Feasibility of Utility-Provided Backup Power during Project Site Planning, 419
- Electric transmission lines**  
Electrical Transmission Line and Substation Structures: Structural Reliability in a Changing World, 2062
- Electric transmission structures**  
Design of Steel Transmission Pole Structures (ASCE/SEI 48-05), 2058
- Electrical Transmission Line and Substation Structures: Structural Reliability in a Changing World, 2062
- Reliability-Based Design of Utility Pole Structures, 2082
- Seismic Response of High Voltage Electrical Transformer-Bushing Systems, 1467
- Electrical conductivity**  
Calibration of Electromagnetic Induction for Regional Assessment of Soil Water Salinity in an Irrigated Valley, 1213
- Electrolytic Treatment of Azo Dye Wastewaters: Impact of Matrix Chloride Content, 656
- Evaluation of Pavement Curing Effectiveness and Curing Effects on Concrete Properties, 1302

## **Electrical conductivity**

High-Carbon Fly Ash in Manufacturing Conductive CLSM and Concrete, 1347

Water Transport in Concrete Damaged by Tensile Loading and Freeze-Thaw Cycling, 1307

## **Electrical equipment**

Generalized Bouc-Wen Model for Highly Asymmetric Hysteresis, 495

Seismic Response of High Voltage Electrical Transformer-Bushing Systems, 1467

## **Electrical resistivity**

Early Hydration Process of Portland Cement Paste by Electrical Measurement, 1272

## **Electrical systems**

Conceptual Planning Process for Electrical Construction, 417

Sequence Planning for Electrical Construction, 324

## **Electrokinetics**

Electrokinetic Nanoparticle Treatment of Hardened Cement Paste for Reduction of Permeability, 1323

Evaluating an Electrokinetically Driven Extraction Method for Measuring Heavy Metal Soil Contamination, 641

Laboratory-Scale Evaluation of Cr(VI) Removal from Clay by Electrokinetics Incorporated with Fe(O) Barrier, 1959

## **Elevation**

Geographic Information Systems/National Elevation Data Route Mileage Verification, 1646

## **Elevators**

Improving the Safety and Efficiency of Materials Transfer at a Construction Site by using an Elevator, 371

## **Embankments**

Design of Rock Protection to Prevent Erosion by Water Flows Down Steep Slopes, 1044

Experimental and Theoretical Investigations on Geocell-Supported Embankments, 14

Finite-Element Parametric Study of the Consolidation Behavior of a Trial Embankment on Soft Clay, 45

In Situ Pore Pressure Responses of Native Peat and Soil under Train Load: A Case Study, 904

Probabilistic Stability Analyses of Embankments Based on Finite-Element Method, 911

## **Emergency services**

Assessing the Financial Feasibility of Utility-Provided Backup Power during Project Site Planning, 419

Delay between Sensing and Response in Water Contamination Events, 1145

Exploratory Map Animation for Post-Event Analysis of Wildfire Protective Action Recommendations, 1922

Optimal Siting of Fire Stations using GIS and ANT Algorithm, 286

Rapid Bridge Replacement: Processes, Techniques, and Needs for Improvements, 400

Rapid Bridge Replacement under Emergency Situation: Case Study, 130

Robust Mobile Ad Hoc Space for Collaboration to Support Disaster Relief Efforts Involving Critical Physical Infrastructure, 247

## **Emissions**

Acoustic Emission Damage Assessment of Steel/CFRP Bonds for Rehabilitation, 214

## **2006 ASCE TRANSACTIONS**

Assessment of the Impact of Improvement Measures on Air Quality: Case Study of Delhi, 1714

Characterization of Methane Flux and Oxidation at a Solid Waste Landfill, 607

Collecting Driving Data to Support Mobile Source Emissions Estimation, 1756

Commercial Odor-Reducing Agents for Minimizing the Odor Potential of Asphalt Binders, 645

Comparing High and Low Residential Density: Life-Cycle Analysis of Energy Use and Greenhouse Gas Emissions, 1772

Decision-Support Tool for Assessing the Environmental Effects of Constructing Commercial Buildings, 102

Emission of Polycyclic Aromatic Hydrocarbons on the Combustion of Liquid Crystal Display Components, 716

Simplified Methodology to Estimate Emissions from Mobile Sources for Ambient Air Quality Assessment, 1753

Structural Monitoring and Integrity Assessment of Medieval Towers, 1605

Technology Evaluation of Hydrogen Light-Duty Vehicles, 663

Total PM Emission Factors for Steel Grit Used in Dry Abrasive Blasting, 768

Transportation Choices and Air Pollution Effects of Telework, 1149

Vapor Leak Detection for an Underground Storage Tank System, 703

Zirconia-Supported Copper Oxide — A Catalyst for Removal of Vehicular Exhaust Gas Pollutants, 707

## **Empirical equations**

Dynamic Uplift Scenarios for Floating Ice, 182

Nonlinear PLS Method for Side Weir Flows, 1219

## **Employees**

Effect of Humor Usage by Engineers at Construction Sites, 1247

Human Systems Engineering™ — A Trilogy, Part II: May The Force Be With You: Anatomy Of Project Failures, 1904

Linear Programming Approach to Optimize Strategic Investment in the Construction Workforce, 402

Proposed Subcontractor-Based Employee Motivational Model, 303

Strategic Management of Human Resources in Construction, 1248

What Does the Construction Industry Value in its Workers?, 392

## **Employment**

Job Performance Evaluation for Construction Companies: An Analytic Network Process Approach, 370

## **Endangered species**

GIS Visualization and Analysis of River Operations Impacts on Endangered Species Habitat, 1816

Modeling Uncertainty in an Object-Oriented Reservoir Operations Model, 1176

## **Energy**

Effect of Envelope on Residential Cooling Load Coupled with Use of Solar/Photovoltaic Panels, 428

Energy Evaluation for Ramberg — Osgood Hysteretic Model, 529

Future Environmental Regulation Issues to Promote Energy Efficiency, 427

## SUBJECT INDEX

## Engineering profession

- Minimum Specific Energy and Critical Flow Conditions in Open Channels, 1221  
Practical Means for Energy-Based Analyses of Disproportionate Collapse Potential, 1400
- Energy absorption**  
Loading of a Gavel-Buried Steel Pipe Subjected to Rockfall, 913  
Rehabilitation of Masonry Walls using Unobtrusive FRP Techniques for Enhanced Out-of-Plane Seismic Resistance, 209
- Energy consumption**  
Comparing High and Low Residential Density: Life-Cycle Analysis of Energy Use and Greenhouse Gas Emissions, 1772  
Decision-Support Tool for Assessing the Environmental Effects of Constructing Commercial Buildings, 102
- Energy conversion**  
New Static Sunshade Design for Energy-Efficient Buildings, 422  
Parameter Variation and Part-Load Efficiencies of Wave Energy Conversion, 421
- Energy dissipation**  
Effects of Vertical Load and Hold-Down Anchors on the Cyclic Response of Wood Framed Shear Walls, 1579  
Energy Dissipation on Reinforced Block Ramps, 1197  
Evaluation of Mixing Energy in Laboratory Flasks used for Dispersant Effectiveness Testing, 593  
Experimental Behavior of Stiffened and Unstiffened End-Plate Connections under Cyclic Loading, 1572  
Experimental Study of Flow in a Vortex Drop Shaft, 937  
Flow Patterns and Energy Dissipation over Various Stepped Chutes, 1172  
Innovative Energy-Dissipating Hood, 1006  
Learning Seismic Design from the Earthquake Itself, 1986  
Mean Flow and Turbulence Structure in Vertical Slot Fishways, 1007  
Turbulence Dissipation in Stirred Jars, 567
- Energy losses**  
3D Simulation of Combining Flows in 90° Rectangular Closed Conduits, 954  
Energy Dissipation on Block Ramps, 935
- Energy methods**  
Nonlinear Stress-Strain Relationship of Soil Reinforced with Flexible Geofibers, 851  
Shear-Flexural Buckling of Cantilever Columns under Uniformly Distributed Load, 557
- Energy storage**  
Improving Air-Cooled Condenser Performance in Combined Cycle Power Plants, 429
- Engineering education**  
Civil Engineering Crisis, 1907  
Classroom Assessment and Redesign of an Undergraduate Steel Design Course: A Case Study, 1433  
Comparative Study of University Courses on Critical Path Method Scheduling, 358  
Creating a New School of Computer Science and Engineering in Kansas City, 1912  
Determining the Content of the First Course in Transportation Engineering, 1423
- Developing Knowledge Landscapes through Project-Based Learning, 1416  
Differences between Experts and Novices in the Review of Engineering Journal Papers, 1409  
Educating Engineers to Create a Sustainable Future, 631  
Effectiveness of Learning Transportation Network Growth through Simulation, 1410  
Engineering Experience and Competitions Implement ABET Criteria, 1419  
Gaining Retention and Achievement for Students Program: A Faculty Development Program, 1424  
Geotechnical Physical Modeling for Education: Learning Theory Approach, 1431  
Hybrid Course Linking Natural Hazards with Probability and Statistics, 1425  
Improving Enrollment in the Master of Construction Management Program at Bowling Green State University, 1434  
Innovative Final-Year Undergraduate Design Project Course using an International Project, 1432  
The Limitations of Planning: The Importance of Learning, 382  
Modeling Ventilation Phenomenon in Sanitary Sewer Systems: A System Theoretic Approach, 1008  
*Soils Magic*: Bringing Civil Engineering to the K-12 Classroom, 1417
- Engineering firms**  
Boardrooms of Energy Firms in the Post-Enron Era, 424  
Decline of the Engineering Class: Effects of Global Outsourcing of Engineering Services, 1910  
Determinants of International Architectural, Engineering, and Construction Firms' Project Success in China, 309  
Fundamental Analysis of Profitability of Large Engineering and Construction Firms, 1260  
Human Systems Engineering™ — A Trilogy, Part II: May The Force Be With You: Anatomy Of Project Failures, 1904  
On Globalization, 1908  
System Model for Analyzing Design Productivity, 1240  
Total Quality Performance of Design/Build Firms using Quality Function Deployment, 292
- Engineering profession**  
At a Crossroads — Is Value-based Compensation the Answer?, 1919  
Changing Our World: True Stories of Women Engineers, 2004  
Civil Engineering: A Changing Profession, 1918  
Civil Engineering Crisis, 1907  
Daniel W. Mead Prizes for Younger Members and Students: Ethically Understanding the Role of Computer Software in Engineering Calculation, 2002  
Don't Throw This Away!: The Civil Engineering Life, 2060  
Mentoring in Engineering, 1909  
Practical Means for Energy-Based Analyses of Disproportionate Collapse Potential, 1400  
Preventing Disputes with Empathy, 1430  
Research Publication Trends and Topics in *Computing in Civil Engineering*, 246  
There's No Such Thing as Engineering Ethics, 1913

## Engineering profession

- Using Patents to Advance the Civil Engineering Profession, 2020  
Vaporizing the Gathering Storm, 2005  
The Widening Gulf, 2027
- Engineering services**  
Decline of the Engineering Class: Effects of Global Outsourcing of Engineering Services, 1910  
Measurement Design Is an Opportunity to Learn, 1917
- Entrainment**  
Entrainment Properties of Plane Surface-Jets in Shallow Current, 967  
Flow-Induced Failure of Cable-Tied Blocks, 964  
Probability Density Function of Instantaneous Drag Forces and Shear Stresses on a Bed, 1050
- Entropy**  
Entropy Application to Improve Construction Finance Decisions, 397  
Entropy Models of Trip Distribution, 1774  
Optimal  $H_m$  Output Feedback Control Systems with Time Delay, 549
- Envelope**  
Application of Hygrothermal Modeling Tool to Assess Moisture Response of Exterior Walls, 101  
Building Integration Solutions, 2053  
Exposure to Condensation Moisture of Sheathing in Retrofitted Leaky Wall Assemblies, 90  
Joint First-Passage Probability and Reliability of Systems under Stochastic Excitation, 441
- Environmental impacts**  
Assessment of the Impact of Improvement Measures on Air Quality: Case Study of Delhi, 1714  
Evaluating Regional Solutions to Salinization and Waterlogging in an Irrigated River Valley, 1166  
Mechanical Properties and Environmental Assessment of Mortars Containing Metallic Oxides, 706  
Model for Environmental Risk Assessment of Tourism Project Construction on the Egyptian Red Sea Coast, 729  
Treating Soil PCP at Optimal Conditions using Heme and Peroxide, 678
- Environmental issues**  
Bioreduction of Hexavalent Chromium in Flow-Through Quartz Sand Columns, 623  
Considering the Environment in Transportation Planning: Review of Emerging Paradigms and Practice in the United States, 1776  
Considering the Environment in Transportation Planning: Review of Emerging Paradigms and Practice in the United States, 1777  
Decision-Support Tool for Assessing the Environmental Effects of Constructing Commercial Buildings, 102  
Determination of Sustainable Yield in Urban Groundwater Systems: Beijing, China, 1072  
Developing a Web-Based System for Large-Scale Environmental Hydraulics Problems with Application to Oil Spill Modeling, 264  
Durability of FRP Composite Bridge Deck Materials under Freeze-Thaw and Low Temperature Conditions, 147  
Emission of Polycyclic Aromatic Hydrocarbons on the Combustion of Liquid Crystal Display Components, 716

## 2006 ASCE TRANSACTIONS

- Environmental Effects on Epoxy Adhesives Employed for Restoration of Historical Buildings, 1344  
Examining the Confluence of Environmental and Water Concerns, 2065  
Example of a Hybrid Life-Cycle Assessment of Construction Processes, 1158  
Future Environmental Regulation Issues to Promote Energy Efficiency, 427  
Industrial Water Use Kuznets Curve: Evidence from Industrialized Countries and Implications for Developing Countries, 1819  
Only Dynamics Can Absorb Dynamics, 403  
Postconstruction Environmental Monitoring of a Fly Ash-Based Road Subbase, 1993  
Preventing Disputes with Empathy, 1430  
Survey of Sustainable Building Design Practices in North America, Europe, and Asia, 88
- Enzymes**  
Enhancing Bioremediation with Enzymatic Processes: A Review, 1947
- Epoxy resins**  
Environmental Effects on Epoxy Adhesives Employed for Restoration of Historical Buildings, 1344
- Equations of motion**  
Accurate Representation of External Force in Time History Analysis, 438
- Equations of state**  
Galerkin Solution for Linear Stochastic Algebraic Equations, 570
- Equilibrium**  
Equilibrium Approach to Integrating Regional Surface Water Treatment and Limited Groundwater Pumping Capacity, 1847  
The Most Degrading Postbuckling Mode of Pin-Jointed Structures, 513
- Equipment**  
Fragility of Bench-Mounted Equipment Considering Uncertain Parameters, 1527
- Erosion**  
Computational Fluid Dynamics Analysis of Flow in a Straight Flume for Sediment Erodibility Testing, 1899  
Control of Scour at Vertical Circular Piles under Waves and Current, 959  
Critical Bed Shear Stress for Unisize Sediment, 949  
Data Interpretation for In Situ Measurements of Cohesive Sediment Erosion, 990  
Design of Rock Protection to Prevent Erosion by Water Flows Down Steep Slopes, 1044  
Erosive Wear of Hydraulic Concrete with Low Steel Fiber Content, 1065  
Evaluation of the Parameters Influencing Self-Healing in Earth Dams, 860  
Flow-Induced Failure of Cable-Tied Blocks, 964  
Global Positioning System/GIS-Based Approach for Modeling Erosion from Large Road Networks, 1113  
Live-Bed Local Pier Scour Experiments, 995  
Mechanistic Model for Self-Healing of Core Cracks in Earth Dams, 861  
Microanalytical Characterizations of Eroded and Slaked Mudstone Proposed as Landfill Liner Material, 1953

## SUBJECT INDEX

- Scour Countermeasures for Wing-Wall Abutments, 988  
Scour Downstream of an Apron Due to Submerged Horizontal Jets, 957
- Errors**  
Case Study of Precision of GPS Differential Correction Strategies: Influence on aDep Velocity and Discharge Estimates, 955  
Damage Identification Based on Dead Load Redistribution: Effect of Measurement Error, 1563  
Errors in the Bed Shear Stress as Estimated from Vertical Velocity Profile, 1220  
Method for Measuring Air-Inmiscible Liquid Partition Coefficients, 599  
Numerical Error in Weighting Function-Based Unsteady Friction Models for Pipe Transients, 1001  
Overparameterized Least-Squares Adjustment with Linear Models for Geodetic and Surveying Applications, 1659  
Seismic Fragility Analysis of Structural Systems, 473  
Structural Damage Detection from Wavelet Coefficient Sensitivity with Model Errors, 547  
Systematic Evaluation of One-Dimensional Unsteady Friction Models in Simple Pipelines, 1000  
Time-Line Interpolation Errors in Pipe Networks, 961  
Time-Step Dependency of Infiltration Errors in the HSPF Model, 1102  
Uncertainty Analysis for Coupled Waterhed and Water Quality Modeling Systems, 1838  
Web-Enabled System Dynamics Model for Error and Change Management on Concurrent Design and Construction Projects, 273
- Estimation**  
Collecting Driving Data to Support Mobile Source Emissions Estimation, 1756  
Crew Production Rates for Contract Time Estimation: Beam Erection, Deck, and Rail of Highway Bridges, 328  
Estimating Seismic Demands for Isolation Bearings with Building Overturning Effects, 1548  
Estimation of Pavement Performance Deterioration using Bayesian Approach, 1144  
Estimation of RAP's Binder Viscosity using GPC without Binder Recovery, 1324  
Evaluation of Speed-Based Travel Time Estimation Models, 1721  
HAZUS Earthquake Loss Estimation Methods, 1927  
HAZUS-MH Flood Loss Estimation Methodology. I: Overview and Flood Hazard Characterization, 1928  
HAZUS-MH Flood Loss Estimation Methodology. II: Damage and Loss Assessment, 1929  
HAZUS-MH Hurricane Model Methodology. II: Damage and Loss Estimation, 1931  
Influence of Pedestrians' Entry Process on Pedestrian Delays at Signal-Controlled Crosswalks, 1757  
Influence of Uncertainties in the Estimation Procedure of Floodwater Level, 1036  
Model for Estimating Acute Health Impacts from Consumption of Contaminated Drinking Water, 1831  
Optimal Instantaneous Unit Hydrograph from Multistorm Data, 1198  
Peak Wind Load Comparison: Theoretical Estimates and ASCE 7, 1551  
Predicting Construction Cost using Multiple Regression Techniques, 362
- Evaluation**  
Quantitative Estimation of Reservoir Sedimentation from Three Typhoon Events, 1109  
Three-Dimensional Modeling for Estimation of Hydraulic Retention Time in a Reservoir, 710
- Estuaries**  
Attachment of Fecal Indicator Bacteria to Particles in the Neuse River Estuary, N.C., 736  
Effect of Chloride Ions on the Dechlorination of Hexachlorobenzene in the Presence of Zero-Valent Iron, 1965  
Estuarine and Coastal Modeling — Proceedings of the Ninth International Conference, 2064  
Growth and Decay of Estuary Ice Cover, 184  
Hydrodynamics of Mesotidal Estuary in Winter, 185  
Model Study of the Influence of Submerged Tidal Barriers on Estuarine Mixing and Exchange Processes, 1034  
Optimization of Frequency Distribution of Storm-Water Discharges for Coastal Ecosystem Restoration, 1835  
Resistivity Survey of the Subsurface Conditions in the Estuary of the Rio de la Plata, 784  
Water Exchange and Sedimentation in an Estuarine Tidal Harbor using Three-Dimensional Simulation, 1893
- Ethics**  
Daniel W. Mead Prizes for Younger Members and Students: Ethically Understanding the Role of Computer Software in Engineering Calculation, 2002  
Organizational Distortions and Failures: A Method to Expose Them, 1408  
Preventing Disputes with Empathy, 1430  
There's No Such Thing as Engineering Ethics, 1913
- Europe**  
The Berlin Connection, 2025  
Case Study: Numerical Simulations of Debris Flow below Stože, Slovenia, 943  
Development of the Vertical Lift Bridge: Squire Whipple to J. A. L. Waddell, 1872-1917, 168  
Experimental In-Plane Behavior of Tuff Masonry Strengthened with Cementitious Matrix — Grid Composites, 210  
Life-Cycle Assessment of Office Buildings in Europe and the United States, 1138  
Survey of Sustainable Building Design Practices in North America, Europe, and Asia, 88
- Evacuation**  
Evacuation Route Selection Based on Tree-Based Hazards using Light Detection and Ranging and GIS, 1695  
Exploratory Map Animation for Post-Event Analysis of Wildfire Protective Action Recommendations, 1922  
Two-Level Integrated Optimization System for Planning of Emergency Evacuation, 1751
- Evaluation**  
Airfield and Highway Pavement: Meeting Today's Challenges with Emerging Technologies, 2047  
Assessment of Bridge Remaining Fatigue Life through Field Strain Measurement, 177  
Benchmarking Initiatives in the Construction Industry: Lessons Learned and Improvement Opportunities, 1255  
A Cautionary Tale, 1995

## Evaluation

- Displacement-Based Design of Supplemental Dampers for Seismic Retrofit of a Framed Structure, 1526  
Enhancement of Denitrification in Upflow Sludge Bed Reactors with Sludge Wasting, 635  
Estimating Fatigue Life of Bridge Components Using Measured Strains, 176  
Estimation of Uniform Delay of Permitted Left Turns from Exclusive Turn Lanes, 1741  
Evaluating the Impact of Vessel-Traffic Interference on Container Terminal Capacity, 1862  
Evaluating the Safety Risk of Narrow Medians using Reliability Analysis, 1701  
Evaluation Model for Information Systems Benefits in Construction Management Processes, 398  
Evaluation of Speed-Based Travel Time Estimation Models, 1721  
Hydrological Evaluation of Septic Disposal Field Design in Sloping Terrains, 731  
In-Service Evaluation of Cable-Stayed Bridges, Overview of Available Methods, and Findings, 175  
Job Performance Evaluation for Construction Companies: An Analytic Network Process Approach, 370  
Lateral Response Evaluation of Single Piles Using Inclinometer Data, 923  
Long Mechanical Interaction between Strengthening Materials and Preexisting Structures, 1334  
Modeling of Functional Construction Requirements for Constructability Analysis, 418  
Performance Evaluation of Reference Evapotranspiration Equations across a Range of Indian Climates, 1190  
Price and Nonprice Criteria for Contractor Selection, 367  
Short and Medium Term Durability Evaluation of FRP-Confined Circular Concrete, 212  
Technology Evaluation of Hydrogen Light-Duty Vehicles, 663  
Vehicle Level Evaluation of Loop Detectors and the Remote Traffic Microwave Sensor, 1686
- Evaporation**  
Artificial Neural Network Models of Daily Pan Evaporation, 1077  
Capillarity and Evaporation Exacerbated Seepage Losses from Unlined Channels, 1235  
Estimating Evaporation from Bare Soil using Soil Moisture Data, 1181  
Finite-Element Modeling and Calibration of Temperature Prediction of Hydrating Portland Cement Concrete Pavements, 1295  
Radioactive Waste Foams: Formation and Mitigation, 680  
Seepage to a Drainage Ditch and Optimization of Its Shape, 1234
- Evapotranspiration**  
Estimation of Evapotranspiration of Different-Sized Navel-Orange Tree Orchards using Energy Balance, 1164  
Irrigation Potential of the TRASVASE System (Santa Elena Peninsula, Guayas, Ecuador), 1215  
Measurement of Light Interception by Navel Orange Orchard Canopies: Case Study of Lindsay, California, 1165  
Performance Evaluation of Reference Evapotranspiration Equations across a Range of Indian Climates, 1190

## 2006 ASCE TRANSACTIONS

- Sensitivity Analyses and Sensitivity Coefficients of Standardized Daily ASCE-Penman-Monteith Equation, 1228  
**Evolutionary computation**  
Comparative Analysis of Data-Driven and GIS-Based Conceptual Rainfall-Runoff Model, 1070  
Effects of Local Search Algorithms on Groundwater Remediation Optimization using a Self-Adaptive Hybrid Genetic Algorithm, 278  
Isotopic Fractionation of Tetrachloroethene Undergoing Biodegradation Supported by Endogenous Decay, 681  
Optimal Planning and Scheduling for Repetitive Construction Projects, 1238
- Excavation**  
Bayesian Updating Application into Simulation in the North Edmonton Sanitary Trunk Tunnel Project, 376  
Combined Finite- and Boundary-Element Analysis of the Effects of Tunneling on Single Piles, 49  
Ground Movement Predictions for Braced Excavations in Undrained Clay, 821  
Innovative Central Opening Strut System for Foundation Excavation, 293  
Integration of Construction As-Built Data via Laser Scanning with Geotechnical Monitoring of Urban Excavation, 410  
Intelligent Utility Locating Tool for Excavators, 379  
Lessons Learned for Ground Movements and Soil Stabilization from the Boston Central Artery, 868  
Novel Approach to Integration of Numerical Modeling and Field Observations for Deep Excavations, 872  
Pile Behavior due to Excavation-Induced Soil Movement in Clay. I: Stable Wall, 780  
Pile Behavior Due to Excavation-Induced Soil Movement in Clay. II: Collapsed Wall, 781  
Validation of Shoring Made of HDPE Pipe or CGS Pipe Normally Used for Culverts and Sewers, 1974
- Excitation**  
Auto-Parametric Vibration of a Cable-Stayed-Beam Structure under Random Excitation, 463  
Dynamic Behavior of Nonlinear Cable System. IV, 464  
Equivalent Linearization for the Nonstationary Response Analysis of Nonlinear Systems with Random Parameters, 481  
Nonlinear Response of Double-Wall Cylindrical Shell Vibrations under Random Excitation, 63  
Optimal Nonlocal and Asymmetric Structural Damping using Regenerative Force Actuation Networks, 532  
Optimal Vibration Absorber with Nonlinear Viscous Power Law Damping and White Noise Excitation, 439  
Probabilistic Critical Excitation Method for Earthquake Energy Input Rate, 538  
Sampled Data Feedback-Feedforward Control of Structures with Time Delays, 1549
- Expansive soils**  
Analysis of Deep Moisture Barriers in Expansive Soils. I: Constitutive Model Formulation, 43  
Analysis of Deep Moisture Barriers in Expansive Soils. II: Water Flow Formulation and Implementation, 44  
Design and Installation of Deep Benchmarks in Expansive Soil, 1658  
Influence of Compactive Efforts on Lime-Slag Treated Tropical Black Clay, 1280

## SUBJECT INDEX

- Soil-Water Characteristic Curves of Stabilized Expansive Soils, 846
- Volume Change Behaviors of Expansive Soils Stabilized with Recycled Ashes and Fibers, 1292
- Experimental data**
- Buckling of GFRP Columns: An Empirical Approach to Design, 242
- Coupled Surge-Heave Motions of a Moored System. I: Model Calibration and Parametric Study, 501
- Coupled Surge-Heave Motions of a Moored System. II: Stochastic Analysis and Simulations, 502
- Equivalent Roughness Height for Plane Bed under Steady Flow, 1048
- Flow in Compound Channel with Abrupt Floodplain Contraction, 1026
- Midply Wood Shear Wall System: Concept and Performance in Static and Cyclic Testing, 1578
- Sediment Transport in River Models with Overbank Flows, 939
- Shear Resistance of FRP RC Beams: Experimental Study, 235
- VOF Model for Simulation of a Free Overfall in Trapezoidal Channels, 1212
- Experimentation**
- Active Control with Optical Fiber Sensors and Neural Networks. II: Experimental Verification, 1567
- Analysis of Strength of Concrete using Design of Experiments and Neural Networks, 1329
- Automated Measurement of Railway Ballast Angularity, 1331
- Bond Behavior of Near-Surface Mounted CFRP Laminate Strips under Monotonic and Cyclic Loading, 218
- Capacity Evaluation of Exterior Sacrificial Shear Keys of Bridge Abutments, 158
- Circular Columns Confined with FRP: Experimental versus Predictions of Models and Guidelines, 189
- Cold-Formed Stainless Steel Sections Subjected to Web Crippling, 1451
- Condensed Model Identification and Recovery for Structural Damage Assessment, 1638
- Countermeasure Toe Protection at Spill-Through Abutments, 956
- Debonding- and Fatigue-Related Strain Limits for Externally Bonded FRP, 197
- Development of FRP Short-Span Deployable Bridge — Experimental Results, 151
- Distortional Buckling of Cold-Formed Stainless Steel Sections: Experimental Investigation, 1488
- Dyed Microspheres for Quantification of UV Dose Distributions: Photochemical Reactor Characterization by Lagrangian Actinometry, 742
- Effects of Vertical Load and Hold-Down Anchors on the Cyclic Response of Wood Framed Shear Walls, 1579
- Elastic Constants Identification of Composite Materials using Single Angle-Ply Laminate, 560
- Event-Driven Control System for Geographically Distributed Hybrid Simulation, 1446
- Experimental Analysis and Numerical Simulations of Waves and Current Flows around Low-Crested Rubble-Mound Structures, 1856
- Experimental Evaluation of Engineering Behavior of Soft Bangkok Clay under Elevated Temperature, 862
- External pressure**
- Experimental Evaluation of Reduced Beam Section Connection to Deep Columns, 1473
- Experimental Investigation of Aluminum Alloy Thin-Walled Tubular Members in Combined Compression and Bending, 1632
- Experimental Study of Offset HSS Connections, 1511
- Experimental Verification of Smart Cable Damping, 462
- Identification of Poroelastic Constants of "Tight" Rocks from Laboratory Tests, 33
- Large-Scale Experiments on Pore Pressure Generation underneath a Caisson Breakwater, 1884
- Live-Bed Local Pier Scour Experiments, 995
- Long Mechanical Interaction between Strengthening Materials and Preexisting Structures, 1334
- Microcosm Approach to Study Transport of Polychlorinated Biphenyls in Sediment, 676
- On the Free Vibrations of Variable-Arc-Length Beams: Analytical and Experimental, 1517
- Performance Assessment of a Precast-Concrete, Buried, Small Arch Bridge, 1390
- Properties of Asphalt Concrete Layer Interfaces, 1312
- Reduction of Vibrations due to Foundation Slabs, 825
- Short and Medium Term Durability Evaluation of FRP-Confined Circular Concrete, 212
- Soil-Pile Response to Blast-Induced Lateral Spreading. I: Field Test, 793
- Tests and Design of Aluminum Alloy Compression Members, 1546
- Three-Dimensional Topography of Debris-Flow Fan, 962
- Virtual Experiments for Welded Structural Steel Connections, 1983
- Virtual Shop Model for Experimental Planning of Steel Fabrication Projects, 281
- Expert systems**
- Prediction of Concrete Strength using Neural-Expert System, 1311
- Explosions**
- Blast-Resistant Glazing Design, 97
- Murrah Building Bombing Revisited: A Qualitative Assessment of Blast Damage and Collapse Patterns, 1399
- Progressive Collapse — An Implosion Contractor's Stock in Trade, 1405
- Explosives**
- Biologically Mediated Reductive Transformation of Ordnance-Related Compounds by Mixed Aquifer Culture using Acetate as the Sole Carbon Source: Laboratory Treatability Studies for Field Demonstration, 1948
- Bioremediation of Hazardous Wastes — A Review, 1946
- Evaluating Ozone as a Remedial Treatment for Removing RDX from Unsaturated Soils, 763
- Static Equivalency in Progressive Collapse Alternate Path Analysis: Reducing Conservatism While Retaining Structural Integrity, 1401
- External pressure**
- Postbuckling of Moderately Thick Imperfect Rings under External Pressure, 569

**Extraction procedures**

- Bioavailability Prediction of Polycyclic Aromatic Hydrocarbons in Field-Contaminated Sediment by Mild Extractions, 626  
 Evaluating an Electrokinetically Driven Extraction Method for Measuring Heavy Metal Soil Contamination, 641

**Fabrication**

- Construction, Inspection, and Maintenance of FRP Deck Panels, 245  
 Construction of a Horizontally Curved Steel I-Girder Bridge, Part II: Inconsistent Detailing, 113  
 Virtual Shop Model for Experimental Planning of Steel Fabrication Projects, 281

**Fabrics**

- Modeling of Multilayer Composite Fabrics for Gas Turbine Engine Containment Systems, 62

**Facilities**

- Characteristics for Leveraging Value Management Processes on Capital Facility Projects, 1253  
 Knowledge Discovery in a Facility Condition Assessment Database using Text Clustering, 1142  
 Markov-Based Optimization Model for Building Facilities Management, 407  
 Multiproject Planning and Resource Controls for Facility Management, 416  
 Remarkable Rotation, 1994  
 Seismic Performance of Industrial Facilities Affected by the 1999 Turkey Earthquake, 1367  
 Validation of Finite-Element Analyses for Storm Shelters, 89

**Facility expansion**

- Infrastructure Development and Expansion under Uncertainty: A Risk-Preference-Based Lattice Approach, 350

**Faculty**

- Development of New Faculty: Summary of the NSF-CMS WEE Workshop, 1418  
 Differences between Experts and Novices in the Review of Engineering Journal Papers, 1409  
 Gaining Retention and Achievement for Students Program: A Faculty Development Program, 1424

**Failure investigations**

- Collapse of the Quebec Bridge, 1907, 1373  
 Failure Investigation of a Foamed-Asphalt Highway Project, 1140  
 Lateral Load Tests on a Two-Story Unreinforced Masonry Building, 1504

**Failure loads**

- Damage-Coupled Progressive Failure and Yield Line Analyses of Metal Plates, 483  
 Empirical Punching Shear Failure Theory for Oriented Strand Boards: Preliminary Study, 1487  
 Virtual Experiments for Welded Structural Steel Connections, 1983

**Failure modes**

- Energy-Based Modeling Approach for Debonding of FRP Plate from Concrete Substrate, 492  
 Strength of Lightweight Glass Aggregate Concrete, 1343  
 Structural Behavior of FRP Composite Bridge Deck Panels, 141

**Failures**

- Assessment of the Liquefaction Susceptibility of Fine-Grained Soils, 885  
 Cellular Automata Model for Predicting the Failure Pattern of Laterally Loaded Masonry Wall Panels, 276  
 Computing Travel Time Reliability in Transportation Networks with Multistates and Dependent Link Failures, 282  
 Debonding Strength of Steel Beams Strengthened with CFRP Plates, 195  
 Domain Decomposition Method for Calculating the Failure Probability of Linear Dynamic Systems Subjected to Gaussian Stochastic Loads, 482  
 Failure Mechanisms and Deployment Accuracy of Elastic-Memory Composites, 75  
 Flow-Induced Failure of Cable-Tied Blocks, 964  
 Frequency Analysis of Ground Snow Data and Production of the Snow Load Map using Geographic Information System for the Eastern Black Sea Region of Turkey, 1553  
 Hybrid Data Mining/Genetic Shredding Algorithm for Reliability Assessment of Structural Systems, 1582  
 Latent Building Defects: Causes and Design Strategies to Prevent Them, 1386  
 Learning Seismic Design from the Earthquake Itself, 1986  
 Limitations in the Back-Analysis of Strength from Failures, 828  
 Material Spatial Variability and Slope Stability for Weak Rock Masses, 796  
 Midply Wood Shear Wall System: Concept and Performance in Static and Cyclic Testing, 1578  
 Numerical Simulation of High-Strength Steel Box-Shaped Columns Failing in Local and Overall Buckling Modes, 1492  
 Organizational Distortions and Failures: A Method to Expose Them, 1408  
 Pile Behavior due to Excavation-Induced Soil Movement in Clay: I: Stable Wall, 780  
 Pile Behavior Due to Excavation-Induced Soil Movement in Clay: II: Collapsed Wall, 781  
 Prediction Models for Debonding Failure Loads of Carbon Fiber Reinforced Polymer Retrofitted Reinforced Concrete Beams, 193  
 Static Strength of Cracked Square Hollow Section T Joints under Axial Loads: I: Experimental, 1475  
 Static Strength of Cracked Square Hollow Section T Joints under Axial Loads: II: Numerical, 1476  
 Strength of Two-Dimensional Nodal Zones in Strut—Tie Models, 1613  
 Strengthening of Reinforced Concrete Bridge Columns with FRP Wrap, 1991  
 Structural Use of Glass, 98  
 Suction Stress Characteristic Curve for Unsaturated Soil, 791
- Fast track construction**
- Accelerating the Construction of a Highway Bridge in Ohio, 1980  
 Fast-Track Urban Freeway Rehabilitation with 55-H Weekend Closures: I-710 Long Beach Case Study, 334  
 Reliability and Stability Buffering Approach: Focusing on the Issues of Errors and Changes in Concurrent Design and Construction Projects, 333

## SUBJECT INDEX

## Fiber reinforced materials

### Fasteners

Design Criteria for Seam and Sheeting-to-Framing Connections of Cold-Formed Steel Shear Panels, 1496

Wood Members Strengthened with Mechanically Fastened FRP Strips, 228

### Fatalities

Comparative Injury and Fatality Risk Analysis of Building Trades, 342

Risk Factors to Driver Fatalities in Single-Vehicle Crashes: Comparisons between Non-Motorcycle Drivers and Motorcyclists, 1687

### Fatigue

Acoustic Emission Damage Assessment of Steel/CFRP Bonds for Rehabilitation, 214

Analysis and Design Procedure for FRP-Strengthened Prestressed Concrete T-Girders Considering Strength and Fatigue, 231

Analysis of Flexible Pavement Response and Performance using Isotropic and Anisotropic Material Properties, 1698

Assessment of Bridge Remaining Fatigue Life through Field Strain Measurement, 177

Behavior of Prestressed Concrete Strengthened with Various CFRP Systems Subjected to Fatigue Loading, 238

Consistent Approach to Calculating Stresses for Fatigue Design of Welded Rib-to-Web Connections in Steel Orthotropic Bridge Decks, 154

Cyclic Behavior of RC Beams Strengthened with Carbon Fiber Sheets Bonded by Inorganic Matrix, 1264

Fatigue and Healing of Asphalt Mixtures: Discriminate Analysis of Fatigue Curves, 1680

Fatigue Behavior of a Steel-Free FRP — Concrete Modular Bridge Deck System, 150

Fatigue Behavior of Welded Aluminum Light Pole Support Details, 1628

Fatigue Life of Girders with Trapezoidal Corrugated Webs, 1543

Fatigue of Corrugated-Web Plate Girders: Analytical Study, 1575

Flexural Fatigue Behavior of Reinforced Concrete Beams Strengthened with FRP Fabric and Precured Laminate Systems, 232

Full-Scale Experimental Investigation of Repair of Reinforced Concrete Interstate Bridge using CFRP Materials, 138

Girder Differential Deflection and Distortion-Induced Fatigue in Skewed Steel Bridges, 121

High-Cycle Fatigue of Diagonally Cracked Reinforced Concrete Bridge Girders: Field Tests, 173

Identifying Effective and Ineffective Retrofits for Distortion Fatigue Cracking in Steel Bridges Using Field Instrumentation, 178

Long Mechanical Interaction between Strengthening Materials and Preexisting Structures, 1334

Measurement of Truck Axle Weights by Instrumenting Longitudinal Ribs of Orthotropic Bridge, 155

Partial Interaction Shear Flow Forces in Continuous Composite Steel-Concrete Beams, 1460

Probability of Fatigue Failure in Steel Catenary Risers in Deep Water, 539

System for In-Service Strain Monitoring of Ordinary Bridges, 170

### Fatigue life

Assessment of Bridge Remaining Fatigue Life through Field Strain Measurement, 177

Bimodal Alongwind Fatigue of Structures, 1528

Comparative Study of Fatigue Provisions for the AASHTO Fatigue Guide Specifications and LRFR Manual for Evaluation, 169

Estimating Fatigue Life of Bridge Components Using Measured Strains, 176

Fatigue Analysis of RC Slabs and Repaired RC Slabs Based on Crack Bridging Degradation Concept, 1532

Fatigue Damage of Steel Bridges Due to Dynamic Vehicle Loads, 135

Fatigue of Corrugated-Web Plate Girders: Experimental Study, 1574

Truck Models for Improved Fatigue Life Predictions of Steel Bridges, 111

### Fatigue strength

Fatigue Behavior of Welded Aluminum Light Pole Support Details, 1628

### Fatigue tests

Fatigue Behavior and Nondestructive Evaluation of Full-Scale FRP Honeycomb Bridge Specimen, 145

### Feasibility studies

CAPM-Based Valuation of Financial Government Supports to Infeasible and Risky Private Infrastructure Projects, 312

### Federal government

State Water Resources Planning in the United States, 2091

### Feedback control

Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Theory, 1186

Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Simulation Results, 1187

Model for Automated Monitoring of Fall Hazards in Building Construction, 360

Optimal Control: Basis for Performance Comparison of Passive and Semicaptive Isolation Systems, 504

Salt River Project Canal Automation Pilot Project: Simulation Tests, 1180

### Fenders

Simple Dynamic Model for Fender Pile Analysis and Design, 1895

### Fertilizers

Impact of Agriculture on Water Quality in the North Carolina Middle Coastal Plain, 1191

### Fiber optics

Active Control with Optical Fiber Sensors and Neural Networks. I: Theoretical Analysis, 1566

Active Control with Optical Fiber Sensors and Neural Networks. II: Experimental Verification, 1567

Deployment of Fiber Optic Networks through Underground Sewers in North America, 1737

Designing and Testing of Concrete Bridge Decks Reinforced with Glass FRP Bars, 126

### Fiber reinforced materials

Behavior of a Fiber-Reinforced Bentonite at Large Shear Displacements, 918

## Fiber reinforced materials

- Bond Behavior of Near-Surface Mounted CFRP Lamine Strips under Monotonic and Cyclic Loading, 218  
Construction, Inspection, and Maintenance of FRP Deck Panels, 245  
Designing and Testing of Concrete Bridge Decks Reinforced with Glass FRP Bars, 126  
Effects of Strain and Damage on Strain-Sensing Ability of Carbon Fiber Cement, 1299  
Erosive Wear of Hydraulic Concrete with Low Steel Fiber Content, 1065  
Experimental Investigation and Fracture Analysis of Debonding between Concrete and FRP Sheets, 530  
Flexural and Shear Strength of Composite Lintels in Glass-Fiber-Reinforced Gypsum Wall Constructions, 1306  
Fracture Toughness of Wood Fiber Gypsum Panels from Size Effect Law, 507  
Influence of Toughness on the Apparent Cracking Load of Fiber-Reinforced Concrete Slabs, 1634  
New Method to Evaluate the Nailing Performance of Extruded High-Performance Fiber-Reinforced Cementitious Composites for Residential Applications, 1309  
Posttensioned Anchorage Zone Enhancement with Fiber-Reinforced Concrete, 159  
Structural Response of Elements Combining Ultra-High-Performance Fiber-Reinforced Concretes and Reinforced Concrete, 1615  
Upsetting Tests of Fresh Cementitious Composites for Extrusion, 450
- Fiber reinforced plastics**
- Determination of Nonlinear Softening Behavior at FRP Composite/Concrete Interface, 484  
Empirical Approach for Determining Ultimate FRP Strain in FRP-Strengthened Concrete Beams, 201  
Energy-Based Modeling Approach for Debonding of FRP Plate from Concrete Substrate, 492  
Finite-Element Analysis of Tapered Steel and Fiber-Reinforced Plastic Bridge Camera Poles, 164  
Fracture Mechanics Method for Mode-I Interface Evaluation of FRP Bonded to Concrete Substrates, 1346  
Moment Capacities and Deflection Limits of PFRP Sheet Piles, 241  
Short and Medium Term Durability Evaluation of FRP-Confined Circular Concrete, 212  
Size and Relative Stiffness Effects on Compressive Failure of Concrete Columns Wrapped with Glass FRP, 1297  
Three-Parameter Model for Debonding of FRP Plate from Concrete Substrate, 485
- Fiber reinforced polymers**
- Acoustic Emission Damage Assessment of Steel/CFRP Bonds for Rehabilitation, 214  
Analysis and Design Procedure for FRP-Strengthened Prestressed Concrete T-Girders Considering Strength and Fatigue, 231  
Analytical Stress—Strain Relationship for Concrete Confined by Steel Stirrups and/or FRP Jackets, 1577  
Approximate Series Solution for Analysis of FRP Composite Highway Bridges, 225  
Behavior and Modeling of Fiber Reinforced Polymer-Confining Concrete, 9  
Behavior of Prestressed Concrete Strengthened with Various CFRP Systems Subjected to Fatigue Loading, 238

## 2006 ASCE TRANSACTIONS

- Bond of GFRP Bars in Concrete: Experimental Study and Analytical Interpretation, 227  
CFRP Repair and Strengthening of Structurally Deficient Piles: Design Issues and Field Application, 191  
CFRP Strengthening for Punching Shear of Interior Slab—Column Connections, 230  
Characterization of a Pultruded FRP Sheet Pile for Waterfront Retaining Structures, 1333  
Characterization of Unistrut Connection Method with Pultruded Fiber-Reinforced Polymer Channels, 1342  
Circular Columns Confined with FRP: Experimental versus Predictions of Models and Guidelines, 189  
Comparison of Roles of FRP Sheets, Stirrups, and Steel Fibers in Confining Bond Critical Regions, 222  
Composite T-Beams using Reduced-Scale Rectangular FRP Tubes and Concrete Slabs, 205  
Concrete Beams Strengthened with Prestressed Near Surface Mounted CFRP, 194  
Critical Review of Deflection Formulas for FRP-RC Members, 206  
Debonding- and Fatigue-Related Strain Limits for Externally Bonded FRP, 197  
Debonding Failures of RC Beams Strengthened with Near Surface Mounted CFRP Strips, 198  
Debonding Strength of Steel Beams Strengthened with CFRP Plates, 195  
Design and Evaluation of Fiber-Reinforced Polymer Bond-Type Anchorages and Ground Anchors, 29  
Development of FRP Short-Span Deployable Bridge—Experimental Results, 151  
Development, Shake Table Testing, and Design of FRP Seismic Restrainers, 152  
Double-Layer Prefabricated FRP Grids for Rapid Bridge Deck Construction: Case Study, 208  
Durability of FRP Composite Bridge Deck Materials under Freeze-Thaw and Low Temperature Conditions, 147  
Durability Prediction for GFRP Reinforcing Bars using Short-Term Data of Accelerated Aging Tests, 216  
Effect of Contact Pressure on Bond Strength of Fiber-Reinforced Polymer to Concrete, 215  
Effect of Fiber-Reinforced Polymer Wraps on Corrosion Activity and Concrete Cracking in Chloride-Contaminated Concrete Cylinders, 202  
Effect of Sleeve Material on Interfacial Contact Behavior of CFRP-Metal Couples, 1358  
Effectiveness of GFRP Sheets for Shear Strengthening of Timber, 237  
Effects of FRP-Concrete Interface Bond Properties on the Performance of RC Beams Strengthened in Flexure with Externally Bonded FRP Sheets, 1345  
Evaluation of Bending Strength of RC Beams Strengthened with FRP Sheets, 220  
Evaluation of Effective Width and Distribution Factors for GFRP Bridge Decks Supported on Steel Girders, 143  
Experimental Investigation on Torsional Behavior of Solid and Box-Section RC Beams Strengthened with CFRP using Photogrammetry, 221  
Fatigue Behavior and Nondestructive Evaluation of Full-Scale FRP Honeycomb Bridge Specimen, 145  
Fatigue Behavior of a Steel-Free FRP—Concrete Modular Bridge Deck System, 150  
FEA of Complex Bridge System with FRP Composite Deck, 196

## SUBJECT INDEX

- Full-Scale Experimental Investigation of Repair of Reinforced Concrete Interstate Bridge using CFRP Materials, 138
- Long-Term Deflections of Reinforced Concrete Beams Externally Bonded with FRP System, 236
- Long-Term Durability of State Street Bridge on Interstate 80, 125
- Moment Redistribution in FRP and Steel-Plated Reinforced Concrete Beams, 200
- Multiscale Nonlinear Framework for the Long-Term Behavior of Layered Composite Structures, 577
- Nonlinear Finite-Element Analysis of a FRP-Strengthened Reinforced Concrete Bridge, 106
- Normalized Test for Prediction of Debonding Failure in Concrete Elements Strengthened with CFRP, 240
- Peel and Shear Fracture Characterization of Debonding in FRP Plated Concrete Affected by Moisture, 192
- Performance Evaluation of FRP Bridge Deck Components under Torsion, 146
- Performance Implications of Imperfectly Plastic Material in Metallic Structures with Nonmetallic Reinforcement, 1461
- Performance in Fire of Small-Scale CFRP Strengthened Concrete Beams, 239
- Performance of Wood Shear Walls Sheathed with FRP-Reinforced OSB Panels, 1453
- Prediction Models for Debonding Failure Loads of Carbon Fiber Reinforced Polymer Retrofitted Reinforced Concrete Beams, 193
- Rehabilitation of Masonry Walls using Unobtrusive FRP Techniques for Enhanced Out-of-Plane Seismic Resistance, 209
- Residual Tensile Properties of GFRP Reinforcing Bars after Loading in Severe Environments, 226
- Seismic Behavior of High-Strength Concrete Columns Confined by Fiber-Reinforced Polymer Tubes, 243
- Selection of Carbon-Fiber-Reinforced Polymer Systems for Steelwork Upgrading, 1335
- Shear Response of Concrete-Filled FRP Composite, 1533
- Splicing of Precast Concrete-Filled FRP Tubes, 224
- Statistical Characterization of Fiber-Reinforced Polymer Composite Material Properties for Structural Design, 1569
- Stiffness Assessment through Modal Analysis of an RC Slab Bridge before and after Strengthening, 162
- Strengthening of Interior Slab — Column Connections using a Combination of FRP Sheets and Steel Bolts, 229
- Strengthening of Reinforced Concrete Bridge Columns with FRP Wrap, 1991
- Stress - Strain Behavior of Large-Scale Circular Columns Confined with FRP Composites, 1450
- Structural Behavior of FRP Composite Bridge Deck Panels, 141
- Structural Retrofitting of Deteriorated Concrete Lighting Poles using FRP Sheets in Wet Layup — Field Application, 211
- Temporal Thermal Behavior and Damage Simulations of FRP Deck, 148
- Tension Stiffening Model for Concrete Beams Reinforced with Steel and FRP Bars, 1363
- Testing, Analysis, and Evaluation of a GFRP Deck on Steel Girders, 142
- Tests on the Ductility of Reinforced Concrete Beams Retrofitted with FRP and Steel Near-Surface Mounted Plates, 199
- Field tests**
- Thermal Compatibility and Durability of Wearing Surfaces on GFRP Bridge Decks, 149
- Use of Fiber-Reinforced Polymer Composite Elements to Enhance Structural Steel Member Ductility, 223
- Vehicle-Induced Dynamic Performance of FRP versus Concrete Slab Bridge, 144
- Verifications of Design Equations of Beams Externally Strengthened with FRP Composites, 213
- Wood Members Strengthened with Mechanically Fastened FRP Strips, 228
- Fiberglass**
- Application of Polymers to Textile-Reinforced Concrete, 1338
- Designing and Testing of Concrete Bridge Decks Reinforced with Glass FRP Bars, 126
- Fibers**
- Control of PAHs from Incineration by Activated Carbon Fibers, 650
- Design Issues for Concrete Reinforced with Steel Fibers, Including Fibers Recovered from used Tires, 1339
- Modeling Steel Frame Buildings in Three Dimensions. II: Elastofiber Beam Element and Examples, 471
- Size and Relative Stiffness Effects on Compressive Failure of Concrete Columns Wrapped with Glass FRP, 1297
- Soil-Water Characteristic Curves of Stabilized Expansive Soils, 846
- Field investigations**
- Analysis and Solution to Human-Induced Lateral Vibrations on a Historic Footbridge, 104
- Circulation in Stratified Lakes due to Flood-Induced Turbidity Currents, 754
- Examination of Level of Analysis Accuracy for Curved I-Girder Bridges through Comparisons to Field Data, 120
- Fatigue Behavior and Nondestructive Evaluation of Full-Scale FRP Honeycomb Bridge Specimen, 145
- Field Investigation at a Chlorinated Ethylene Contaminated Site, 1963
- High-Cycle Fatigue of Diagonally Cracked Reinforced Concrete Bridge Girders: Field Tests, 173
- Observation and Simulation of Floodwater Intrusion and Sedimentation in the Shichikashuku Reservoir, 1020
- Operations Management for Engineering Consulting Firms: A Case Study, 1249
- Quantitative Estimation of Reservoir Sedimentation from Three Typhoon Events, 1109
- Three-Dimensional Topography of Debris-Flow Fan, 962
- Urban Runoff Quality Characterization and Load Estimation in Saskatoon, Canada, 750
- Field tests**
- Construction of Concrete-Faced Rockfill Dams with Weak Rocks, 849
- Designing and Testing of Concrete Bridge Decks Reinforced with Glass FRP Bars, 126
- Field Evaluation of Crushed Glass - Dredged Material Blends, 831
- Full-Scale Measurements to Investigate Rain — Wind Induced Cable-Stay Vibration and its Mitigation, 133
- Identifying Effective and Ineffective Retrofits for Distortion Fatigue Cracking in Steel Bridges Using Field Instrumentation, 178

## Field tests

- Live-Load Distribution Factors for Prestressed Concrete, Spread Box-Girder Bridge, 160  
Observed Performance of Long Steel H-Piles Jacked into Sandy Soils, 779  
Overview of Vibrational Structural Health Monitoring with Representative Case Studies, 174

## Fills

- Behavior of Buried Flexible Pipe under High Fills and Design Implications, 903  
Soil — Nail Pullout Interaction in Loose Fill Materials, 36

## Filters

- Aerated Rock Filters for Enhanced Ammonia and Fecal Coliform Removal from Facultative Pond Effluents, 646  
Air/Water Oxygen Transfer in a Biological Aerated Filter, 603  
Anaerobic Filter Treatment of Municipal Wastewater: Biosolids Behavior, 585  
Bayesian State Estimation Method for Nonlinear Systems and its Application to Recorded Seismic Response, 474  
Column Test Studies of Ochre Biofilm Formation in Geotextile Filters, 896  
Enhanced Criterion for Base Soil Retention in Embankment Dam Filters, 929  
Methodological Aspects of using Blast Furnace Slag for Wastewater Phosphorus Removal, 746  
Stability of Long Trenches in Sand Supported by Bentonite-Water Slurry, 4  
Standard Guidelines for the Design of Urban Subsurface Drainage (ASCE/EWRI 12-05); Standard Guidelines for the Installation of Urban Subsurface Drainage (ASCE/EWRI 13-05); and Standard Guidelines for the Operation and Maintenance of Urban Subsurface Drainage (ASCE/EWRI 14-05), 2090

## Filtration

- Aerobic Biofiltration Processes — Advances in Wastewater Treatment, 1969  
Analytic Solution on Critical Suspended Particle Size and Minimum Collection Efficiency in Deep Bed Filtration, 741  
Arsenic Removal from Water by Moving Bed Active Filtration, 583  
Deterministic-Based Model of Slow Sand Filtration. I: Model Development, 697  
Deterministic-Based Model of Slow Sand Filtration. II: Model Application, 698  
Enhanced Criterion for Base Soil Retention in Embankment Dam Filters, 929  
Experimental Analysis and Numerical Simulations of Waves and Current Flows around Low-Crested Rubble-Mound Structures, 1856  
Stress-Controlled Filtration with Compressible Particles, 858  
Vermiculite Filtration for Removal of Oil from Water, 1957  
Wastewater Treatment with Biomass Attached to Porous Geotextile Baffles, 614

## Financial management

- Boardrooms of Energy Firms in the Post-Enron Era, 424

## 2006 ASCE TRANSACTIONS

- CAPM-Based Valuation of Financial Government Supports to Infeasible and Risky Private Infrastructure Projects, 312

## Classifying Construction Contractors Using Unsupervised-Learning Neural Networks, 411

- Entropy Application to Improve Construction Finance Decisions, 397

- Examining the Business Impact of Owner Commitment to Sustainability, 326

- Fundamental Analysis of Profitability of Large Engineering and Construction Firms, 1260

- Model for Financial Renegotiation in Public-Private Partnership Projects and Its Policy Implications: Game-Theoretic View, 355

- Public Clients' Best Value Perspectives of Public Private Partnerships in Infrastructure Development, 298

- Relationship between Governance Structure and Financial Performance in Construction, 1239

## Fine-grained soils

- Assessment of the Liquefaction Susceptibility of Fine-Grained Soils, 885

- Field Study to Investigate WIDE Technology for TCE Extraction, 880

- Liquefaction Susceptibility Criteria for Silts and Clays, 908

- Stabilizing Soft Fine-Grained Soils with Fly Ash, 1291

- Three-Dimensional Pavement Analysis with Nonlinear Subgrade Materials, 1321

## Finite difference method

- Damage Assessment in Beams using Inverse Method, 469

- Seepage from a Rectangular Ditch to the Groundwater Table, 1192

## Finite differences

- Generalized Fick's Law and Fractional ADE for Pollution Transport in a River: Detailed Derivation, 1079

## Finite element method

- 3D FE Analysis of Flexible Pavement with Geosynthetic Reinforcement, 1705

- Application of Graded Finite Elements for Asphalt Pavements, 459

- Change of Weld Residual Stresses due to Loss of Material, 1630

- Closed-Form Stiffness Matrix for the Four-Node Quadrilateral Element with a Fully Populated Material Stiffness, 581

- Construction of a Horizontally Curved Steel I-Girder Bridge. Part I: Erection Sequence, 112

- Construction of Concrete-Faced Rockfill Dams with Weak Rocks, 849

- Continuous Interface Elements Subject to Large Shear Deformations, 21

- Crashworthiness of Motor Vehicle and Traffic Light Pole in Frontal Collisions, 1743

- Damage Assessment in Beams using Inverse Method, 469

- Damage-Coupled Progressive Failure and Yield Line Analyses of Metal Plates, 483

- DEM-FEM Model of Highly Saturated Soil Motion Due to Seepage Force, 1892

- Design Equation for Offshore Overlap Tubular K-Joints under In-Plane Bending, 1545

- Development of Tensile Hoop Stress during Horizontal Directional Drilling through Sand, 48

## SUBJECT INDEX

- Ductile Web Fracture Initiation in Steel Shear Links, 1556  
Dynamic Response of Closed-Loop System with Uncertain Parameters using Interval Finite-Element Method, 520  
Effects of Environmental Action on Thermal Stress Analysis of Karaj Concrete Arch Dam, 487  
Evaluation of Distress in Supports of Hyperbolic Paraboloid Shell, 1364  
Evaluation of Early Strength Requirement of Concrete for Slab Replacement using Accelerated Pavement Testing, 1749  
Evaluation of the Movements of the Dam Embankments by Means of Geodetic and Geotechnical Methods, 1645  
Experimental Evaluation of Dynamic Effects for a Selected Highway Bridge, 1391  
FEA of Complex Bridge System with FRP Composite Deck, 196  
Finite - Element Modeling of the Nonlinear Behavior of Bolted-T-Stub Connections, 1530  
Finite-Element Analysis of Tapered Steel and Fiber-Reinforced Plastic Bridge Camera Poles, 164  
Finite-Element Computation of Wave-Structure Interaction between Steep Stokes Waves and Vertical Cylinders, 1886  
Finite-Element Crash Test Simulation of New York Portable Concrete Barrier with I-Shaped Connector, 1481  
Finite-Element Modeling and Calibration of Temperature Prediction of Hydrating Portland Cement Concrete Pavements, 1295  
Finite-Element Modeling of Timber Joints with Punched Metal Plate Fasteners, 1479  
Finite-Element Parametric Study of the Consolidation Behavior of a Trial Embankment on Soft Clay, 45  
Finite-Element Simulation and Design of Cold-Formed Steel Channels Subjected to Web Crippling, 1633  
Flow Computation and Mass Balance in Galerkin Finite-Element Groundwater Models, 1054  
Hydrodynamics of Mesotidal Estuary in Winter, 185  
Hyperelasticity Model for Finite-Element Analysis of Natural and High Damping Rubbers in Compression and Shear, 440  
Improved STrength Model for Interior Flat Plate-Column Connections Subject to Unbalanced Moment, 1509  
Influence of Functionally Graded Material on Buckling of Skew Plates under Mechanical Loads, 528  
Influence of Hopper Eccentricity on Discharge of Cylindrical Mass Flow Silos with Rigid Walls, 542  
Influence of Micromaterial Heterogeneity on Strain Localization in Granular Materials, 37  
Influence of Parapets and Aspect Ratio on Live-Load Distribution, 123  
Influence of Secondary Elements and Deck Cracking on the Lateral Load Distribution of Steel Girder Bridges, 122  
Interpretation of Impact Penetration Measurements in Soft Clays, 848  
Loading of a Gavel-Buried Steel Pipe Subjected to Rockfall, 913  
Long-Term Behavior of Timber-Concrete Composite Beams. I: Finite Element Modeling and Validation, 1440  
Minor Axis Moment-Thrust Response Behavior in Steel I-Shaped Members, 1544
- Finite elements  
Modeling 3D Supercritical Flow with Extended Shallow-Water Approach, 1024  
Modeling of Multilayer Composite Fabrics for Gas Turbine Engine Containment Systems, 62  
Natural Frequencies of a Structure with Bounded Uncertainty, 578  
New Stabilized Finite Element Method Embedded with a Cap Model for the Analysis of Granular Materials, 460  
Nonlinear Finite-Element Analysis of a FRP-Strengthened Reinforced Concrete Bridge, 106  
Numerical Analysis of T-Bar Penetration in Soft Clay, 53  
Orthogonal Effects in Seismic Analysis of Skewed Bridges, 116  
Performance Assessment of a Precast-Concrete, Buried, Small Arch Bridge, 1390  
Probabilistic Stability Analyses of Embankments Based on Finite-Element Method, 911  
Reduction of Vibrations due to Foundation Slabs, 825  
Seasonal Deterioration of Unsurfaced Roads, 857  
Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. I: Theory, 1515  
Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. II: Applications, 1516  
Seismic Behavior of Reduced Beam Section Moment Connections to Deep Columns, 1474  
Shear Behavior of Corrugated Web Bridge Girders, 1457  
Shear Live-Load Distribution Factors for I-Girder Bridges, 124  
Simple Phenomenological Model for Reinforcing Steel under Arbitrary Load, 1542  
Simplified Structural Analysis of Retaining Walls on Stepped Footings, 1973  
Simulation of Crack Propagation in Asphalt Concrete using an Intrinsic Cohesive Zone Model, 563  
Static Strength of Cracked Square Hollow Section T-Joints under Axial Loads. II: Numerical, 1476  
Steady-State Diffusion — Advection by Exponential Finite Elements, 55  
Strength and Behavior of Cold-Formed Steel Z-Sections Subjected to Major Axis Bending, 1600  
Structural Damage Detection via Modal Data with Genetic Algorithms, 1586  
Temporal Thermal Behavior and Damage Simulations of FRP Deck, 148  
Thermohydromechanical Modeling of a Full-Scale Tunnel Sealing Clay Bulkhead, 778  
Three-Dimensional Pavement Analysis with Nonlinear Subgrade Materials, 1321  
Undrained Bearing Capacity of Two-Strip Footings on Spatially Random Soil, 54  
Validation of Finite-Element Analyses for Storm Shelters, 89  
Vehicle-Induced Dynamic Performance of FRP versus Concrete Slab Bridge, 144

## Finite elements

- Analysis of Deep Moisture Barriers in Expansive Soils. II: Water Flow Formulation and Implementation, 44  
Combined Finite- and Boundary-Element Analysis of the Effects of Tunneling on Single Piles, 49  
Construction of Customized Mass-Stiffness Pairs using Templates, 80

## Finite elements

- Damage Localization and Finite-Element Model Updating Using Multiresponse NDT Data, 172  
Distortional Buckling of Cold-Formed Stainless Steel Sections: Finite-Element Modeling and Design, 1489  
Distribution of Compressive Stresses in Transversely Posttensioned Concrete Bridge Decks, 110  
Efficient Computation of Response Sensitivities for Inelastic Structures, 1464  
Fatigue Behavior of Welded Aluminum Light Pole Support Details, 1628  
Fatigue of Corrugated-Web Plate Girders: Analytical Study, 1575  
Finite-Element Analysis of Hot Mix Asphalt Microstructure using Effective Local Material Properties and Strain Gradient Elasticity, 451  
Freezing - Thawing Model for Soils and Rocks, 1286  
General Formulation of Two Kinematic Hardening Constitutive Models with a Smooth Elastoplastic Transition, 41  
Homogenization Approach for the Limit Analysis of Out-of-Plane Loaded Masonry Walls, 1602  
Live-Load Distribution Factors for Prestressed Concrete, Spread Box-Girder Bridge, 160  
Long-Term Structural Health Monitoring of the San Ysidro Bridge, 1365  
Multilaminate Macromodel for Concrete Masonry: Formulation and Verification, 1635  
Nonlinear Analysis of Reinforced Concrete Beam — Columns with Bond-Slip, 559  
Numerical Model for the Analysis of Unbonded Pre-stressed Members, 1442  
Numerical Simulation of High-Strength Steel Box-Shaped Columns Failing in Local and Overall Buckling Modes, 1492  
Plastic Hinge Integration Methods for Force-Based Beam — Column Elements, 1462  
Properties of Asphalt Concrete Layer Interfaces, 1312  
Strut-and-Tie Design Methodology for Three-Dimensional Reinforced Concrete Structures, 1531  
Study of a Honeycomb-Type Rigidified Inflatable Structure for Housing, 1603  
System Identification and Damage Detection of a Pre-stressed Concrete Beam, 1606  
Vehicle Collision with Bridge Piers, I  
Virtual Experiments for Welded Structural Steel Connections, 1983
- Finland**  
Artificial Neural Network Modeling of Dissolved Oxygen in a Wetland Pond: The Case of Hovi, Finland, 1090
- Fire hazards**  
Catastrophe Risk Models for Wildfires in the Wildland — Urban Interface: What Insurers Need, 1938  
Effect of Torsion on Limiting Temperature of Steel Structures in Fire, 1512  
Exploratory Map Animation for Post-Event Analysis of Wildfire Protective Action Recommendations, 1922  
The Place of Fire, 1932
- Fire protection**  
Use of Inorganic Polymer to Improve the Fire Response of Balsa Sandwich Structures, 1303
- Fire resistance**  
Behavior of High Strength Structural Steel at Elevated Temperatures, 1631

## 2006 ASCE TRANSACTIONS

- Effect of Torsion on Limiting Temperature of Steel Structures in Fire, 1512  
Performance in Fire of Small-Scale CFRP Strengthened Concrete Beams, 239  
Use of Inorganic Polymer to Improve the Fire Response of Balsa Sandwich Structures, 1303
- Fire safety**  
Performance-Based Structural Fire Safety, 1369
- Fires**  
High-Strength Self-Compacting Concrete Exposed to Fire Test, 1349  
Optimal Siting of Fire Stations using GIS and ANT Algorithm, 286  
Safety Assessment of Concrete Tunnel Linings under Fire Load, 1534
- Fish habitats**  
Mean Flow and Turbulence Structure in Vertical Slot Fishways, 1007  
Valuing Fisheries and Wetlands using Integrated Economic-Hydrologic Modeling — Mekong River Basin, 1850
- Fish management**  
Distribution of Methylmercury in a Mercury-Contaminated Ecosystem, 1961
- Flanges**  
Behavior of Corrugated Web I-Girders under In-Plane Loads, 517
- Interaction of Top Lateral and Internal Bracing Systems in Tub Girders, 1598**
- Flexibility**  
Flexibility-Based Damage Localization from Stochastic Realization Results, 499  
Reliability Analysis of Deflection of Buried Flexible Pipes, 1754  
Seismic Design Forces. II: Flexible Nonstructural Components, 1590  
Use of Modal Flexibility for Damage Detection and Condition Assessment: Case Studies and Demonstrations on Large Structures, 1607
- Flexible pavements**  
3D FE Analysis of Flexible Pavement with Geosynthetic Reinforcement, 1705  
Analysis of Flexible Pavement Response and Performance using Isotropic and Anisotropic Material Properties, 1698  
Comparative Study of Different Subbase Materials, 1326  
Degradation of a Granular Base under a Flexible Pavement: DEM Simulation, 56  
Difference between In Situ Flexible Pavement Measured and Calculated Stresses and Strains, 1725  
Effect of Heavy Multiple Axle Trucks on Flexible Pavement Damage using In-Service Pavement Performance Data, 1747  
Elastoplastic Model for the Long-Term Behavior Modeling of Unbound Granular Materials in Flexible Pavements, 40  
Impact of Temperature Gradient on Modulus of Asphaltic Concrete Layers, 1316  
Model to Predict Pavement Temperature Profile: Development and Validation, 1679  
Rational Approach for Base Type Selection, 1746

## SUBJECT INDEX

## Floods

- Role of Learning Algorithm in Neural Network-Based Backcalculation of Flexible Pavements, 287  
Structural Adequacy of Flexible Pavements with Types and Widths of Shoulders, 1670
- Flexible pipes**  
Behavior of Buried Flexible Pipe under High Fills and Design Implications, 903  
Full-Scale Field Tests on Flexible Pipes under Live Load Application, 1366
- Flexural strength**  
Debonding Failures of RC Beams Strengthened with Near Surface Mounted CFRP Strips, 198  
Design Issues for Concrete Reinforced with Steel Fibers, Including Fibers Recovered from used Tires, 1339  
Development and Production of Ready-Mixed Soil Material, 1354  
Flexural and Shear Strength of Composite Lintels in Glass-Fiber-Reinforced Gypsum Wall Constructions, 1306  
Potential of Wood Waste Ash as an Additive in Concrete, 1330  
Tensile Strength Bearing Ratio and Slake Durability of Class F Fly Ash Stabilized with Lime and Gypsum, 1263
- Flexure**  
Behavior of Corrugated Web I-Girders under In-Plane Loads, 517  
Debonding- and Fatigue-Related Strain Limits for Externally Bonded FRP, 197  
Evaluation of Bending Strength of RC Beams Strengthened with FRP Sheets, 220  
Flexural Load Testing of Concrete-Filled FRP Tubes with Longitudinal Steel and FRP Rebar, 204  
New Avenue of Achieving Ductility for Reinforced Concrete Members, 1587  
Splicing of Precast Concrete-Filled FRP Tubes, 224  
Structural Retrofitting of Deteriorated Concrete Lighting Poles using FRP Sheets in Wet Layup — Field Application, 211
- Floating bodies**  
Treatment of Polishing Wastewater from Semiconductor Manufacturer by Dispersed Air Flotation, 588  
Wave Forcing of Small Floating Bodies, 1874
- Floating ice**  
Dynamic Uplift Scenarios for Floating Ice, 182
- Floating structures**  
Design, Construction, and Installation of a Floating Caisson used as a Bridge Pier, 1869  
Experimental Study on the Hydrodynamics of a Floating, Production, Storage, and Offloading System, 1861  
Probability of Fatigue Failure in Steel Catenary Risers in Deep Water, 539  
Viscous Effect on the Roll Motion of a Rectangular Structure, 454
- Flocculation**  
Charge Reversal Effect on Blanket in Full-Scale Floc Blanket Clarifier, 756  
Fundamentals of Bubble Formation during Coagulation and Sedimentation Processes, 664
- Quantitative Model of Coagulation with Inorganic Polymer Flocculant PACI: Application of the PCNM, 647  
The Role of Bioflocculation on Suspended Solids and Particulate COD Removal in the Trickling Filter Process, 655  
Type II Settling Data Analysis, 598
- Flood frequency**  
Bivariate Flood Frequency Analysis Using the Copula Method, 1086  
Flood Frequency Analysis for Sicily, Italy, 1082  
Influence of Uncertainties in the Estimation Procedure of Floodwater Level, 1036
- Flood hydrology**  
From a NEXRAD Rainfall Map to a Flood Inundation Map, 1074
- Flood plains**  
Countermeasures Toe Protection at Spill-Through Abutments, 956  
Flood Plain Filling by a Monoclonal Flood Wave, 984  
Flow Resistance and Momentum Flux in Compound Open Channels, 1059  
Functional Relationships of Resistance in Wide Flood Plains with Rigid Unsubmerged Vegetation, 948  
Methodology for Ranking the Elements of Water-Supply Networks, 1160  
Scour around Bankline and Setback Abutments in Compound Channels, 933  
Sediment Transport in River Models with Overbank Flows, 939
- Flood routing**  
Flow Resistance and Momentum Flux in Compound Open Channels, 1059  
Parameter Estimation for the Nonlinear Muskingum Model using the BFGS Technique, 1217
- Floods**  
2D Shallow-Water Model using Unstructured Finite-Volumes Methods, 958  
Analytical Solution of the Burgers Equation for Simulating Translatory Waves in Conveyance Channels, 951  
Analytical Solutions of Nonlinear Kinematic Wave Model, 1126  
Bat Echolocation Interfering with Ultrasonic Sensors, 1069  
Bridge Blockage and Overbank Flow Simulations using HEC-RAS in the Keelung River during the 2001 Nari Typhoon, 963  
Circulation in Stratified Lakes due to Flood-Induced Turbidity Currents, 754  
Climate Model Simulation of Point Rainfall Frequency Characteristics, 1127  
Combined Hydraulic and Black-Box Models for Flood Forecasting in Urban Drainage Systems, 1131  
Designed for Dry Feet: Flood Protection and Land Recalibration in the Netherlands, 2059  
Development and Verification of an Analytical Solution for Forecasting Nonlinear Kinematic Flood Waves, 1107  
Downstream Economic Benefits of Conservation Development, 1804  
Dynamic Routing Model with Real-time Roughness Updating for Flood Forecasting, 992

## Floods

- Effects of Flood Control Structures on Flood Response for Hurricane Floyd in the Brandywine Creek Watershed, Pennsylvania, 1115  
Flood Estimation by GIUH-Based Clark and Nash Models, 1124  
Flood Frequency Analysis for Sicily, Italy, 1082  
Flood Plain Filling by a Monoclinal Flood Wave, 984  
Flow in Compound Channel with Abrupt Floodplain Contraction, 1026  
Fuzzy Analysis of Slope-Area Discharge Estimates, 1171  
Gridded Snowmelt and Rainfall-Runoff CWMS Hydrologic Modeling of the Red River of the North Basin, 1080  
HAZUS — Its Development and Its Future, 1926  
HAZUS-MH Flood Loss Estimation Methodology. I: Overview and Flood Hazard Characterization, 1928  
HAZUS-MH Flood Loss Estimation Methodology. II: Damage and Loss Assessment, 1929  
Monitoring Snow-Cover Depletion by Coupling Satellite Imagery with a Distributed Snowmelt Model, 1808  
Numerical Calculation of Turbulence Structure in Depth-Varying Unsteady Open-Channel Flows, 999  
Observation and Simulation of Floodwater Intrusion and Sedimentation in the Shichikashuku Reservoir, 1020  
Opportunity Costs of Residential Best Management Practices for Stormwater Runoff Control, 1810  
Optimal Control of Open-Channel Flow using Adjoint Sensitivity Analysis, 1055  
Predictability of Annual Sediment Loads based on Flood Events, 1108  
Price of Permits: Measuring the Economic Impacts of Wetland Development on Flood Damages in Florida, 1934  
Probabilistic Behavior of Floods of Record in the United States, 1120  
Real Estate Market Response to Coastal Flood Hazards, 1936  
Structural Stability of Concrete Gravity Dams Strengthened by Rockfill Buttressing: Hydrostatic Load, 926  
Updating Rainfall IDF Relationships to Maintain Urban Drainage Design Standards, 1123  
Validation of the Hydrological Processes in a Hydrological Model, 1117
- Floors**  
Market Disequilibrium and Urban Land Shortages: Analysis of Policy and Patterns in Hong Kong, 1780  
Pendulum Tuned Mass Dampers for Floor Vibration Control, 1371
- Florida**  
Estimating the Hydraulic Conductivity of Landfilled Municipal Solid Waste using the Borehole Permeameter Test, 671  
Experimental Evaluation of Dynamic Effects for a Selected Highway Bridge, 1391  
Hurricane Mitigation of the Florida House Learning Center, 1382  
Modeling Compressive Strength Development in Florida Concrete, 1362  
Polyethylene Duct Cracking on Posttensioning Tendons in Florida Segmented Bridges, 1327

## 2006 ASCE TRANSACTIONS

- Price of Permits: Measuring the Economic Impacts of Wetland Development on Flood Damages in Florida, 1934  
Royal Treatment, 2031  
Safety Analysis of Florida Rural Interstate Freeway Travel in Relation to the 65 km/h (40 mi/hr) Minimum Speed Regulation, 1740  
Turbocharged Organizational Change through High-Octane Management Training, 1916  
**Flow**  
Plane Impulse Waves in Reservoirs, 1888  
**Flow characteristics**  
Dimensionless Stage - Discharge Relationship in Radial Gates, 1184  
Investigations on the Static Behavior of Self-Compacting Concrete Under-Reamed Piles, 1305  
**Flow control**  
Salt River Project Canal Automation Pilot Project: Simulation Tests, 1180  
**Flow distribution**  
Numerical Simulation of Obstructed Round Buoyant Jets in a Static Uniform Ambient, 974  
**Flow measurement**  
Accuracy of Annual Volume from Current-Meter-Based Stage Discharges, 1121  
Variation of Flow Pattern with Sinuosity in Sine-Generated Meandering Streams, 1031  
**Flow patterns**  
Case Study: Refinement of Hydraulic Operation of a Complex CSO Storage/Treatment Facility by Numerical and Physical Modeling, 944  
Flow Patterns and Energy Dissipation over Various Stepped Chutes, 1172  
Sludge Blanket Height and Flow Pattern in UASB Reactors: Temperature Effects, 699  
Variation of Flow Pattern with Sinuosity in Sine-Generated Meandering Streams, 1031  
**Flow rates**  
Electromagnetic Wave Surface Velocimetry, 946  
**Flow resistance**  
Case Study: Numerical Simulations of Debris Flow below Stože, Slovenia, 943  
Flow Resistance and Momentum Flux in Compound Open Channels, 1059  
Flow Resistance of Rock Chutes with Protruding Boulders, 986  
Functional Relationships of Resistance in Wide Flood Plains with Rigid Unsubmerged Vegetation, 948  
Reanalysis and Correction of Bed-Load Relation of Meyer-Peter and Müller using Their Own Database, 1049  
**Flow separation**  
Asymmetric Flow in Symmetric Supercritical Expansions, 953  
**Flow simulation**  
Circulation in Stratified Lakes due to Flood-Induced Turbidity Currents, 754  
Comparison of Three Alternative ANN Designs for Monthly Rainfall-Runoff Simulation, 1122  
Real Local Losses Estimation for On-Line Emitters Using Empirical and Numerical Procedures, 1224

## SUBJECT INDEX

## Foam

- Sediment Transport over Ripples in Oscillatory Flow, 950
- Three-Dimensional CFD Predictions and Experimental Comparison of Pressure Drop of Some Common Pipe Fittings in Turbulent Flow, 426
- Flow visualization**  
Laboratory Observation of Solitary Wave Propagating over a Submerged Rectangular Dike, 488
- Fluid dynamics**  
Physical and Numerical Comparison of Flow over Ogee Spillway in the Presence of Tailwater, 1068
- Fluid flow**  
Asymmetric Flow in Symmetric Supercritical Expansions, 953
- Coupled Heat-Deformation-Flow Analysis for Clayey Soil, 826
- Improving Fluid Flow in Clarifiers using a Highly Porous Media, 726
- Multiphase/Multidomain Computations using Continuum and Lattice — Boltzmann Methods, 84
- Turbulent Flow Friction Factor Calculation using a Mathematically Exact Alternative to the Colebrook — White Equation, 1017
- Fluid mechanics**  
Turbulent Flow Friction Factor Calculation using a Mathematically Exact Alternative to the Colebrook — White Equation, 1017
- Fluidization**  
Effect of Pressure Fluctuations on the Quality of Fluidization and on the Generation of Particulate Matters during Incineration, 708
- Fluidized beds**  
Adsorption and Desorption of Volatile Organic Compounds in Fluidized Bed, 648
- Fluid-structure interaction**  
Finite-Element Computation of Wave-Structure Interaction between Steep Stokes Waves and Vertical Cylinders, 1886
- Fluid-Soil-Structure Interaction in Liquefaction around a Cyclically Moving Cylinder, 1882
- Laboratory Observation of Solitary Wave Propagating over a Submerged Rectangular Dike, 488
- Modeling of Seabed Interaction of Oceanographic Moorings in the Frequency Domain, 1898
- Viscous Effect on the Roll Motion of a Rectangular Structure, 454
- Flumes**  
Computational Fluid Dynamics Analysis of Flow in a Straight Flume for Sediment Erodibility Testing, 1899
- Data Interpretation for In Situ Measurements of Cohesive Sediment Erosion, 990
- Effectiveness of Bermuda Grass as Vegetative Cover in Grassed Waterway: A Simulated Study, 1196
- Laboratory Experiments on Frazil-Size Characteristics in a Counterrotating Flume, 941
- New Facility to Study River Abrasion Processes, 994
- Reanalysis and Correction of Bed-Load Relation of Meyer-Peter and Müller using Their Own Database, 1049
- Fluoridation**  
Modeling the Sorption of Fluoride onto Alumina, 608
- Flushing**  
Performances of Hydraulics and Bedload Sediment Flushing in Rigid Channel using Surge Flows, 1183
- Stress-Controlled Filtration with Compressible Particles, 858
- Flutter**  
Analysis of Long Span Bridge Response to Winds: Building Nexus between Flutter and Buffeting, 1637
- Flutter Phenomenon in Aeroelasticity and its Mathematical Analysis, 58
- Nonlinear Aeroelasticity: Continuum Theory, Flutter/Divergence Speed, and Plate Wing Model, 76
- Revisiting Multimode Coupled Bridge Flutter: Some New Insights, 551
- Fluvial hydraulics**  
Breaking Antidunes: Cyclic Behavior due to Hysteresis, 993
- Case Study of Precision of GPS Differential Correction Strategies: Influence on aDcp Velocity and Discharge Estimates, 955
- Critical Bed Shear Stress for Unisize Sediment, 949
- Fly ash**  
Analysis of Strength of Concrete using Design of Experiments and Neural Networks, 1329
- Assessing the Carbonation Behavior of Cementitious Materials, 1351
- Comparative Study of Different Subbase Materials, 1326
- Ecofriendly Concrete with High Volume of Lagoon Ash, 1310
- Exploring Concrete Slump Model using Artificial Neural Networks, 266
- High-Carbon Fly Ash in Manufacturing Conductive CLSM and Concrete, 1347
- High-Volume Fly Ash Concrete: Analysis and Application, 1976
- Leaching of Lime from Fly Ash Stabilized with Lime and Gypsum, 1273
- Metals Removal from Municipal Waste Incinerator Fly Ashes and Reuse of Treated Leachates, 654
- Modeling Compressive Strength Development in Florida Concrete, 1362
- Postconstruction Environmental Monitoring of a Fly Ash-Based Road Subbase, 1993
- Reclaimed Hydrated Fly Ash as a Geomaterial, 1283
- Site-Specific Study on Stabilization of Acid-Generating Mine Tailings using Coal Fly Ash, 1277
- Soil Stabilization in Semiarid and Arid Land Agriculture, 1282
- Soil-Water Characteristic Curves of Stabilized Expansive Soils, 846
- Stabilizing Soft Fine-Grained Soils with Fly Ash, 1291
- Structural Performance Monitoring of an Unstabilized Fly Ash-Based Road Subbase, 1769
- Tensile Strength Bearing Ratio and Slake Durability of Class F Fly Ash Stabilized with Lime and Gypsum, 1263
- Volume Change Behaviors of Expansive Soils Stabilized with Recycled Ashes and Fibers, 1292
- Foam**  
Evaluation of Foamed Asphalt Cold In-Place Pavement Recycling Using Nondestructive Techniques, 1770

## Folded plates

### Folded plates

- Local-Plate and Distortion Postbuckling Behavior of Cold-Formed Steel Lipped Channel Columns with Intermediate Stiffeners, 1491  
Transverse Analysis of Strutted Box Girder Bridges, 107

### Footings

- Seismic Bearing Capacity of Shallow Strip Footings Embedded in Slope, 30  
Seismic Performance of Concrete-Filled FRP Tube Columns for Bridge Substructure, 139  
Simplified Structural Analysis of Retaining Walls on Stepped Footings, 1973  
Stiffness of a Flexible Circular Footing Embedded in an Elastic Half-Space, 16  
Undrained Bearing Capacity of Square and Rectangular Footings, 27  
Undrained Bearing Capacity of Two-Strip Footings on Spatially Random Soil, 54

### Forecasting

- Application of Support Vector Machine in Lake Water Level Prediction, 1091  
Combined Hydraulic and Black-Box Models for Flood Forecasting in Urban Drainage Systems, 1131  
Combining Rainfall-Runoff Model Outputs for Improving Ensemble Streamflow Prediction, 1130  
Development and Verification of an Analytical Solution for Forecasting Nonlinear Kinematic Flood Waves, 1107  
Dynamic Routing Model with Real-time Roughness Updating for Flood Forecasting, 992  
Effect of Forecast-Based Pricing on Irrigated Agriculture: A Simulation, 1843  
Enhancing Short-Term Traffic Forecasting with Traffic Condition Information, 1712  
Evaluation of the National Weather Service Operational Hydrologic Model and Forecasts for the American River Basin, 1111  
Forecasting Project Status by using Fuzzy Logic, 406  
The Gulf of Mexico Decommissioning Market, 369  
Modeling Network Traffic for Planning Applications in a Small Community, 1790  
Operating Reservoirs in Changing Conditions, 2078  
Validation of the Hydrological Processes in a Hydrological Model, 1117

### Foreign firms

- Strengths, Weaknesses, Opportunities, and Threats for Foreign-Invested Construction Enterprises: A China Study, 384

### Foreign projects

- Innovative Final-Year Undergraduate Design Project Course using an International Project, 1432  
On Globalization, 1908

### Forensic engineering

- Forensic Engineering (2006), 2066  
Learning Seismic Design from the Earthquake Itself, 1986

### Foundation construction

- Challenges of Underpinning Two Landmark Buildings, 1985  
Termination Criteria for Jacked Pile Construction and Load Transfer in Weathered Soils, 854

## 2006 ASCE TRANSACTIONS

### Foundation design

- Assessment of Variable Uncertainties for Reliability-Based Design of Foundations, 888  
Foundation Analysis and Design -- Innovative Methods, 2067

### Foundation settlement

- Raked Piles — Virtues and Drawbacks, 852  
Stiffness of a Flexible Circular Footing Embedded in an Elastic Half-Space, 16

### Foundations

- Experimental Studies on Seismic Behavior of Steel Pile-to-Pile-Cap Connections, 119  
Finite-Element Parametric Study of the Consolidation Behavior of a Trial Embankment on Soft Clay, 45  
Full Two-Dimensional Model for Rolling Resistance: Hard Cylinder on Viscoelastic Foundation of Finite Thickness, 565  
Innovative Central Opening Strut System for Foundation Excavation, 293  
Investigation of Foundation Vibrations Resting on a Layered Soil System, 789  
Liquefaction, Cyclic Mobility, and Failure of Silt, 845  
Load Transfer in Rammed Aggregate Piers, 51  
Protection Measures against Mine Subsidence Taken at a Building Site, 1278  
Reduction of Vibrations due to Foundation Slabs, 825  
Stress Path Testing of Realistically Cured Lime and Lime/Cement Stabilized Clay, 1288  
Unsaturated Soils 2006, 2096

### Fractals

- Generalized Fick's Law and Fractional ADE for Pollution Transport in a River: Detailed Derivation, 1079  
Nondestructive Assessment of Reinforced Concrete Structures Based on Fractal Damage Characteristic Factors, 531

### Fracture mechanics

- Damage Assessment in Beams using Inverse Method, 469  
Fatigue of Corrugated-Web Plate Girders: Analytical Study, 1575  
Fracture Toughness of Wood Fiber Gypsum Panels from Size Effect Law, 507  
Study on the Average Fracture Energy for Crack Propagation in Concrete, 1357

### Fractures

- Analysis of Finite Strain Anisotropic Elastoplastic Fracture in Thin Plates and Shells, 81  
Application of Graded Finite Elements for Asphalt Pavements, 459  
Cracking Tendency of Self-Compacting Concrete Subjected to Restrained Shrinkage: Experimental Study and Modeling, 1266  
Ductile Web Fracture Initiation in Steel Shear Links, 1556  
Effects of Connection Fractures on Global Behavior of Steel Moment Frames Subjected to Earthquakes, 1447  
Experimental Investigation and Fracture Analysis of Debonding between Concrete and FRP Sheets, 530  
Experimental Performance of Link-to-Column Connections in Eccentrically Braced Frames, 1557  
Fracture Analysis of Shear Deformable Bi-Material Interface, 466

## SUBJECT INDEX

## Frequency

- Fracture Mechanics Based Model for Joints under Cyclic Loading, 556
- Fracture Mechanics Method for Mode-I Interface Evaluation of FRP Bonded to Concrete Substrates, 1346
- Microvoid Damage Model with Material Dilation for Ductile Fracture, 546
- Normal Transmission of S-Wave across Parallel Fractures with Coulomb Slip Behavior, 498
- Numerical Modeling and Analysis of Solute Velocity and Macrodispersion for Linearly and Nonlinearly Sorbing Solutes in a Single Fracture with Matrix Diffusion, 1104
- Optimal Inspection Scheduling of Steel Bridges using Nondestructive Testing Techniques, 134
- Peel and Shear Fracture Characterization of Debonding in FRP Plated Concrete Affected by Moisture, 192
- Physically Based Model for Evaluation of Rock Scour due to High-Velocity Jet Impact, 5
- Prediction of Ductile Fracture in Steel Connections using SMCS Criterion, 1455
- Simulation of Crack Propagation in Asphalt Concrete using an Intrinsic Cohesive Zone Model, 563
- Size Effect on Strength of Quasi-Brittle Structures with Reentrant Corners Symmetrically Loaded in Tension, 558
- Spatial Moment Analysis for One-Dimensional Non-isothermal Quartz Transport and Dissolution/Precipitation in Fracture-Matrix System, 1106
- Static Strength of Cracked Square Hollow Section T-Joints under Axial Loads. I: Experimental, 1475
- Stress Zones near Displacement Piers: II. Radial Cracking and Wedging, 783
- Void Growth Model and Stress Modified Critical Strain Model to Predict Ductile Fracture in Structural Steels, 1627
- Framed structures**
- Alternative Formulations for Structural Optimization: An Evaluation Using Frames, 1624
- Cross-Modal STrain Energy Method for Estimating Damage Severity, 477
- Empirical Evaluation of Structural Frame Performance Criteria: Realizing the Potential of Hybrid Concrete Construction, 316
- Modal Strain Energy Decomposition Method for Damage Localization in 3D Frame Structures, 533
- Modeling Steel Frame Buildings in Three Dimensions. I: Panel Zone and Plastic Hinge Beam Elements, 470
- Modeling Steel Frame Buildings in Three Dimensions. II: Elasto-fiber Beam Element and Examples, 471
- Modeling the Impact of Failed Members for Progressive Collapse Analysis of Frame Structures, 1403
- New Approach for Seismic Nonlinear Analysis of Inelastic Framed Structures, 535
- Frames**
- Alternative Formulations for Structural Optimization: An Evaluation Using Frames, 1624
- Behavior of Complex Hat Shapes used as Truss Chord Members, 1501
- Ductile Web Fracture Initiation in Steel Shear Links, 1556
- Empirical Evaluation of Structural Frame Performance Criteria: Realizing the Potential of Hybrid Concrete Construction, 316
- Experiments of Cold-Formed Steel Connections and Portal Frames, 1498
- Modal Seismic Control of Building Frames by Artificial Neural Network, 252
- Numerical Model for the Analysis of Unbonded Pre-stressed Members, 1442
- Performance-Based Structural Fire Safety, 1369
- Probabilistic Demand Models and Fragility Curves for Reinforced Concrete Frames, 1593
- Seismic Performance of Steel Girder Bridges with Ductile Cross Frames using Single Angle X Braces, 1471
- Seismic Performance of Steel Girder Bridges with Ductile Cross Frames using Buckling-Restrained Braces, 1472
- Semiactive Fuzzy Control of the Seismic Response of Building Frames, 1519
- Sequential Hybrid Inverse Mapping for State-Specified Design of Frames, 1581
- Structural Weight Optimization of Frames Using Tabu Search. I: Optimization Procedure, 1622
- Structural Weight Optimization of Frames Using Tabu Search. II: Evaluation and Seismic Performance, 1623
- Three-Dimensional Indirect Boundary Element Method Formulation for Dynamic Analysis of Frames Buried in Semiinfinite Elastic Media, 536
- Frazil ice**
- Laboratory Experiments on Frazil-Size Characteristics in a Counterrotating Flume, 941
- Free flow**
- Dimensionless Stage - Discharge Relationship in Radial Gates, 1184
- Free surfaces**
- Numerical Simulation of Solitary Waves using Velocity-Vorticity Formulation of Navier-Stokes Equations, 456
- Seepage from a Rectangular Ditch to the Groundwater Table, 1192
- Freeze-thaw**
- Compatibility with Jet A-1 of a GCL Subjected to Freeze-Thaw Cycles, 920
- Durability of FRP Composite Bridge Deck Materials under Freeze-Thaw and Low Temperature Conditions, 147
- Evaluating the Long-Term Performance of Geosynthetic Clay Liners Exposed to Freeze-Thaw, 804
- Freezing - Thawing Model for Soils and Rocks, 1286
- Numerical Modeling of Thaw Penetration in Frozen Ground Subject to Low-Intensity Infrared Heating, 180
- Water Transport in Concrete Damaged by Tensile Loading and Freeze-Thaw Cycling, 1307
- Freezing**
- Practical Model of Frost Heave in Clay, 786
- Thermal Transfer Analysis of a Freezing Soil Medium with an Embedded Pipeline, 181
- Frequency**
- Dynamic Characteristics and Effective Stiffness Properties of Honeycomb Composite Sandwich Structures for Highway Bridge Applications, 203
- Frequency-Dependent Amplification of Unsaturated Surface Soil Layer, 827
- Reduction of Vibrations due to Foundation Slabs, 825
- Three-Dimensional Free Vibration Analysis of Multi-phase Piezocomposite Structures, 524

## Frequency analysis

### Frequency analysis

Damping in Shear Beam Structures and Estimation of Drift Response, 522

Efficacy of Hilbert and Wavelet Transforms for Time-Frequency Analysis, 543

Frequency Analysis of Ground Snow Data and Production of the Snow Load Map using Geographic Information System for the Eastern Black Sea Region of Turkey, 1553

Frequency Distributions of Heavy Snowfall from Snowstorms in the United States, 1114

Modeling of Seabed Interaction of Oceanographic Moorings in the Frequency Domain, 1898

Nonparametric Approach for Bivariate Drought Characterization using Palmer Drought Index, 1084

Probabilistic Critical Excitation Method for Earthquake Energy Input Rate, 538

### Frequency response

Detection of Partial Blockage in Single Pipelines, 952

### Friction

Airfield and Highway Pavement: Meeting Today's Challenges with Emerging Technologies, 2047

Analytical Investigation of Friction Sleeve Length Effects on Stratigraphic Interpretation, 13

Effect of Convergence on Nonlinear Flow in Porous Media, 973

Effect of Slab-Base Interaction on Measured Concrete Pavement Responses, 1707

Effect of Sleeve Material on Interfacial Contact Behavior of CFRP-Metal Couples, 1358

Experimental Study of Flow in a Vortex Drop Shaft, 937

Failure and Dilatancy Properties of Sand at Relatively Low Stresses, 582

Fragility of Bench-Mounted Equipment Considering Uncertain Parameters, 1527

Hydrodynamic Behavior of Asymmetric Oscillatory Boundary Layers at Low Reynolds Numbers, 1040

Mechanical Model for Unbonded Seven-Wire Tendon with Single Broken Wire, 576

Particle Shape Effects on Packing Density, Stiffness, and Strength: Natural and Crushed Sands, 832

Postpeak Strength of Interfaces in a Stress-Dilatancy Framework, 914

Range of Validity of the Transient Damping Leakage Detection Method, 1025

Reanalysis and Correction of Bed-Load Relation of Meyer-Peter and Müller using Their Own Database, 1049

Soil Restraint to Oblique Movement of Buried Pipes in Dense Sand, 1681

Systematic Evaluation of One-Dimensional Unsteady Friction Models in Simple Pipelines, 1000

Total Friction Loss along Multiple Outlets Pipes with Open End, 1167

Turbulent Flow Friction Factor Calculation using a Mathematically Exact Alternative to the Colebrook — White Equation, 1017

### Friction resistance

Full Two-Dimensional Model for Rolling Resistance: Hard Cylinder on Viscoelastic Foundation of Finite Thickness, 565

### Frost heave

Practical Model of Frost Heave in Clay, 786

## 2006 ASCE TRANSACTIONS

### Froude number

Analytical Solution of the Burgers Equation for Simulating Translatory Waves in Conveyance Channels, 951

Clear Water Local Scour by Submerged Three-Dimensional Wall Jets: Effect of Tailwater Depth, 989

Effectiveness of Bermuda Grass as Vegetative Cover in Grassed Waterway: A Simulated Study, 1196

### Frozen soils

Cold Regions Engineering 2006 — Current Practices in Cold Regions Engineering, 2056

Cyclic Lateral Load Response of Bridge Column-Foundation-Soil Systems in Freezing Conditions, 1611

Numerical Modeling of Thaw Penetration in Frozen Ground Subject to Low-Intensity Infrared Heating, 180

### Full-scale tests

Assessing Damage to Airport Pavement Structure due to Complex Gear Loads, 1761

Data Reduction of Horizontal Load Full-Scale Tests on Bored Concrete Piles and Pile Groups, 847

Exposure to Condensation Moisture of Sheathing in Retrofitted Leaky Wall Assemblies, 90

Full-Scale Experimental Investigation of Repair of Reinforced Concrete Interstate Bridge using CFRP Materials, 138

Full-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1500

Lateral Load Tests on a Two-Story Unreinforced Masonry Building, 1504

Racking Performance of Tall Unblocked Shear Walls, 1452

Seismic Behavior of Sheathed Cold-Formed Structures: Physical Tests, 1495

Seismic Upgrading of RC Buildings by FRP: Full-Scale Tests of a Real Structure, 1337

Shear Behavior of Corrugated Web Bridge Girders, 1457

### Funding allocations

Decision Methodology for Allocating Funds across Transportation Infrastructure Assets, 1137

Moving On, 2018

### Furrow irrigation

Comparison of Crop Contamination by Microorganisms during Subsurface Drip and Furrow Irrigation, 725

Efficient Solution of the Coupled One-Dimensional Surface — Two-Dimensional Subsurface Flow during Furrow Irrigation Advance, 1206

Sensitivity Analysis of Soil Hydraulic Properties on Subsurface Water Flow in Furrows, 1211

### Fuzzy sets

ANN and Fuzzy Logic Models for Simulating Event-Based Rainfall-Runoff, 1064

Assignment of Seasonal Factor Categories to Urban Coverage Count Stations using a Fuzzy Decision Tree, 1735

Characteristics for Leveraging Value Management Processes on Capital Facility Projects, 1253

Contaminant Transport Model for Unsaturated Soil using Fuzzy Approach, 752

Entropy Application to Improve Construction Finance Decisions, 397

## SUBJECT INDEX

- Evaluation of Drinking Water Treatment Technology: An Entropy-Based Fuzzy Application, 728  
Forecasting Project Status by using Fuzzy Logic, 406  
Four Alternative Definitions of the Fuzzy Safety Factor, 83  
Fuzzy Analysis of Slope-Area Discharge Estimates, 1171  
Fuzzy Geographic Information Systems for Phytoremediation Plant Selection, 596  
Fuzzy Logic Based Condition Rating of Existing Reinforced Concrete Bridges, 1392  
Fuzzy Logic Model for Equilibrium Scour Downstream of a Dam's Vertical Gate, 1038  
Optimization of Frequency Distribution of Storm-Water Discharges for Coastal Ecosystem Restoration, 1835  
Semiactive Fuzzy Control of the Seismic Response of Building Frames, 1519  
Shifts in Activity Centers along the Corridor of the Blue Subway Line in Taipei, 1773  
**Gas**  
Development of a Field Design for In Situ Gaseous Treatment of Sediment Based on Laboratory Column Test Data, 769  
Effect of Gas on Pore Pressures in Wet Landfills, 829  
Effect of Wet—Dry Cycles and Cation Exchange on Gas Permeability of Geosynthetic Clay Liners, 871  
Fundamentals of Bubble Formation during Coagulation and Sedimentation Processes, 664  
Ozonation of 2-Chlorophenol in Aqueous Solutions with a Packed Contactor, 775  
Removal of Toluene Vapor with Dispersed Activated Carbon, 622  
**Gas pipelines**  
Critical Flotation Density of Pipelines in Soils Liquefied by Waves and Density of Liquefied Soils, 1879  
Liquefaction around Pipelines under Waves, 1880  
**Gas recovery**  
Vapor Leak Detection for an Underground Storage Tank System, 703  
**Gasification**  
Gasification of Aromatic Volatile Organic Compounds Generated from Petroleum and Refinery Industries with Syngas Recycling, 1956  
**Gasoline**  
Electronic Nose — Membrane Interface Probe for Geoenvironmental Site Characterization, 882  
Oxidative and Reductive Degradation of Mixed Contaminants by Bifunctional Aluminum, 1944  
**Gates**  
Dimensionless Stage—Discharge Relationship in Radial Gates, 1184  
EOF Analysis of Complex Response of Venice Mobile Gates, 1872  
Fuzzy Logic Model for Equilibrium Scour Downstream of a Dam's Vertical Gate, 1038  
**Gaussian process**  
Bimodal Alongwind Fatigue of Structures, 1528  
Evaluation of Karhunen-Loeve, Spectral, and Sampling Representations for Stochastic Processes, 453

## Geographic information systems

- Formation Processes and Configuration of Channel-Flow Dominated Alluvial Deltas by Numerical Simulation, 1012  
**Geodetic surveys**  
Base Station Establishment using Multiple Global Positioning Satellite Stations and Free Net Approach, 1644  
Evaluation of a GPS-Based Approach for Rapid and Precise Determination of Geodetic/Astronomical Azimuth, 1661  
Overparameterized Least-Squares Adjustment with Linear Models for Geodetic and Surveying Applications, 1659  
Robustness Analysis of Two-Dimensional Networks, 1664  
Solving an Inverse Problem of a Meridian Arc in Terms of Computer Algebra System, 1641  
Stepwise Parameter Estimations in a Time-Variant Similarity Transformation, 1660  
Use of Fresnel Enantiomorphic Diffraction in Surveying Laser Methods, 1650  
**Geographic information systems**  
Analyzing the Impacts of Microscale Urban Attributes on Travel: Evidence from Suburban Adelaide, Australia, 1787  
Application of GIS Technologies in Port Facilities and Operations Management, 2048  
Comparative Analysis of Data-Driven and GIS-Based Conceptual Rainfall-Runoff Model, 1070  
Compilation of a Map of Recent Vertical Crustal Movements in Eastern Canada using Geographic Information System, 1663  
Construction Scheduling and Progress Control using Geographical Information Systems, 285  
Customizing Visualization in Three-Dimensional Urban GIS via Web-Based Interaction, 1782  
Development of GIS-Based Model to Estimate Relative Reductions in Crop Yield due to Salinity and Waterlogging, 1227  
Evacuation Route Selection Based on Tree-Based Hazards using Light Detection and Ranging and GIS, 1695  
Flood Estimation by GIUH-Based Clark and Nash Models, 1124  
Frequency Analysis of Ground Snow Data and Production of the Snow Load Map using Geographic Information System for the Eastern Black Sea Region of Turkey, 1553  
From a NEXRAD Rainfall Map to a Flood Inundation Map, 1074  
Fuzzy Geographic Information Systems for Phytoremediation Plant Selection, 596  
Geographic Information Systems/National Elevation Data Route Mileage Verification, 1646  
GIS Visualization and Analysis of River Operations Impacts on Endangered Species Habitat, 1816  
GIS-Based Implementation of Three-Dimensional Limit Equilibrium Approach of Slope Stability, 839  
Irrigation Potential of the TRASVASE System (Santa Elena Peninsula, Guayas, Ecuador), 1215  
Methodology for Ranking the Elements of Water-Supply Networks, 1160  
New Methodology: Permit Checking of Vehicular Overloads, 131  
Optimal Siting of Fire Stations using GIS and ANT Algorithm, 286

## Geographic information systems

- RiverSpill: A National Application for Drinking Water Protection*, 970  
Route Selection for a New Transportation System in Hillside Urban Areas: A Case Study in Nagasaki, Japan, 1781  
Satellite Monitoring of Urban Spatial Growth in the Amman Area, Jordan, 1796  
Single Epoch Kinematic GPS Positioning Technique in Short Baseline, 1647  
Strategic Decision Analysis for Selection of Landfill Sites, 1652  
Using GPS to Measure the Impact of Construction Activities on Rural Interstates, 339  
Watershed-Scale Impacts of Forest Buffers on Water Quality and Runoff in Urbanizing Environment, 1815

## Geogrids

- Experimental and Theoretical Investigations on Geocell-Supported Embankments, 14

## Geoid

- Local Geoid Improvement using GPS and Leveling Data: Case Study, 1655  
Long-Range Geoid Testing by GPS-Leveling Data in Turkey, 1643  
Real-Time Determination of Orthometric Heights Accurate to the Centimeter Level using a Single GPS Receiver: Case Study, 1640

## Geology

- Challenges of Underpinning Two Landmark Buildings, 1985  
Development of Real-Time Safety Control System for Urban Gas Supply Network, 801  
Protection Measures against Mine Subsidence Taken at a Building Site, 1278

## Geomaterials

- Analysis of Factors Affecting Strain Distribution in Geosynthetics, 777  
In Field Soil Characterization: Approach Based on Texture Image Analysis, 787  
Parameter Optimization and Sensitivity Analysis for Disturbed State Constitutive Model, 19  
Protection Measures against Mine Subsidence Taken at a Building Site, 1278  
Reclaimed Hydrated Fly Ash as a Geomaterial, 1283  
Selection of Physical and Geometrical Properties for the Confinement of Vibrations in Nonhomogeneous Beams, 72  
Site and Geomaterial Characterization, 2087  
Site-Specific Study on Stabilization of Acid-Generating Mine Tailings using Coal Fly Ash, 1277

## Geomembranes

- Estimation of Diffusion Coefficients and Solubilities for Organic Solvents Permeation through High-Density Polyethylene Geomembrane, 657  
High-Density Polyethylene Membrane Containing Fe<sup>0</sup> as a Contaminant Barrier, 690  
Physical Response of Geomembrane Wrinkles Overlying Compacted Clay, 902

## Geometry

- Downstream Hydraulic Geometry of Alluvial Channels, 1067  
Evaluation of Local Bending in Profile-Wall Polyethylene Pipes, 1762

## 2006 ASCE TRANSACTIONS

- Impact of Specimen Geometry on Dynamic Modulus Measurement Test Setup, 1314

- Modeling Driver Visual Demand on Three-Dimensional Highway Alignments, 1700

- New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. I: Formulation, 571

- Optimal Control of Open-Channel Flow using Adjoint Sensitivity Analysis, 1055

- Validation of a Large-Eddy Simulation Model to Simulate Flow in Pump Intakes of Realistic Geometry, 1062

## Geomorphology

- Flood Estimation by GIUH-Based Clark and Nash Models, 1124

- Spatial Uncertainty Modeling of Climate Processes for Extreme Hydrogeomorphological Events Hazard Monitoring, 758

## Geophysical surveys

- Case Study: Application of GPR to Detection of Hidden Dangers to Underwater Hydraulic Structures, 932

- Resistivity Survey of the Subsurface Conditions in the Estuary of the Rio de la Plata, 784

## Georgia

- Defeating Delays, 2028  
Developing Multiple Indicators and Triggers for Drought Plans, 1817

- Impact of Property Management Services on Affordable Housing Residents in Atlanta, Georgia, 1387

- Transportation System Sustainability Issues in High-, Middle-, and Low-Income Economies: Case Studies from Georgia (U.S.), South Korea, Colombia, and Ghana, 1793

## Geosynthetics

- 3D FE Analysis of Flexible Pavement with Geosynthetic Reinforcement, 1705

- Allowable Bearing Pressures of Bridge Sills on GRS Abutments with Flexible Facing, 855

- Analysis of Factors Affecting Strain Distribution in Geosynthetics, 777

- Case History of Geosynthetic Reinforced Segmental Retaining Wall Failure, 921

- Column Test Studies of Ochre Biofilm Formation in Geotextile Filters, 896

- Compatibility with Jet A-1 of a GCL Subjected to Freeze—Thaw Cycles, 920

- Constriction Size of Geotextile Filters, 2

- Effect of Wet—Dry Cycles and Cation Exchange on Gas Permeability of Geosynthetic Clay Liners, 871

- Evaluating the Long-Term Performance of Geosynthetic Clay Liners Exposed to Freeze-Thaw, 804

- General Analytical Framework for Design of Flexible Reinforced Earth Structures, 909

- Lateral Resistance of Single Pile Located near Geosynthetic Reinforced Slope, 901

- Seismic Response of a Composite Landfill Cover, 819

- Wastewater Treatment with Biomass Attached to Porous Geotextile Baffles, 614

## Geotechnical engineering

- Advances in Unsaturated Soil, Seepage, and Environmental Geotechnics, 2046

## SUBJECT INDEX

- GeoCongress 2006: Geotechnical Engineering in the Information Technology Age, 2068  
Geomechanics II — Testing, Modeling, and Simulation, 2069  
Geotechnical Physical Modeling for Education: Learning Theory Approach, 1431  
GEO-Volution: The Evolution of Colorado's Geological and Geotechnical Engineering Practice, 2070  
Liquefaction, Cyclic Mobility, and Failure of Silt, 845  
New Approach to Determine Three-Dimensional Contacts in Blocks System: Penetration Edges Method, 42  
Prediction of Soil Composition from CPT Data using General Regression Neural Network, 272  
Reliability and Human Factors in Geotechnical Engineering, 836  
*Soils Magic:* Bringing Civil Engineering to the K-12 Classroom, 1417  
Stability of Submarine Pipelines on Liquefied Seabeds, 1878  
Unsaturated Soil Mechanics in Engineering Practice, 807  
Using Our Best Judgment, 2030  
**Geotechnical models**  
Influence of Micromaterial Heterogeneity on Strain Localization in Granular Materials, 37  
Prediction of Soil-Water Characteristic Curve using Genetic Programming, 840  
**Germany**  
The Berlin Connection, 2025  
**Girders**  
Behavior of Corrugated Web I-Girders under In-Plane Loads, 517  
Characterization of Material Properties of HPS-485W (70 W) TMCP for Bridge Girder Applications, 114  
Critical Inclination of Compression Struts in Concrete Beams, 1508  
Evaluation of Effective Width and Distribution Factors for GFRP Bridge Decks Supported on Steel Girders, 143  
Fatigue Life of Girders with Trapezoidal Corrugated Webs, 1543  
Fatigue of Corrugated-Web Plate Girders: Analytical Study, 1575  
Fatigue of Corrugated-Web Plate Girders: Experimental Study, 1574  
Girder Differential Deflection and Distortion-Induced Fatigue in Skewed Steel Bridges, 121  
Interaction of Top Lateral and Internal Bracing Systems in Tub Girders, 1598  
**Glass**  
Blast-Resistant Glazing Design, 97  
Design of Architectural Glazing to Resist Earthquakes, 96  
Design of Window Glass for Lateral Pressures, 95  
Laboratory Evaluation of Crushed Glass-Dredged Material Blends, 830  
Landmark Library, 2021  
Overture to Omaha, 2024  
Strength of Lightweight Glass Aggregate Concrete, 1343  
Structural Use of Glass, 98  
**Granular materials**  
Flexural and Shear Strength of Composite Lintels in Glass-Fiber-Reinforced Gypsum Wall Constructions, 1306  
Long-Term Deflections of Reinforced Concrete Beams Externally Bonded with FRP System, 236  
**Glass reinforced plastics**  
Buckling of GFRP Columns: An Empirical Approach to Design, 242  
**Global positioning**  
3D Calculation of Stopping-Sight Distance from GPS Data, 1739  
Assessment of Dynamic Measurement Accuracy of GPS in Three Directions, 1656  
Base Station Establishment using Multiple Global Positioning Satellite Stations and Free Net Approach, 1644  
Case Study of Precision of GPS Differential Correction Strategies: Influence on aDCP Velocity and Discharge Estimates, 955  
Evaluation of a GPS-Based Approach for Rapid and Precise Determination of Geodetic/Astronomical Azimuth, 1661  
Experimental Verification and Full-Scale Deployment of Global Positioning System to Monitor the Dynamic Response of Tall Buildings, 1561  
GPS Precise Point Positioning Software for Ground Control Point Establishment in Remote Sensing Applications, 1642  
Local Geoid Improvement using GPS and Leveling Data: Case Study, 1655  
Long-Range Geoid Testing by GPS-Leveling Data in Turkey, 1643  
Real-Time Determination of Orthometric Heights Accurate to the Centimeter Level using a Single GPS Receiver: Case Study, 1640  
Using Global Positioning System to Improve Materials-Locating Processes on Industrial Projects, 361  
Validating Wind-Induced Response of Tall Buildings: Synopsis of the Chicago Full-Scale Monitoring Program, 1588  
**Government**  
Influence of the National Performance Review on Supervisors in Government Organizations, 1920  
**Grade separation**  
Screening Tools for Considering Grade Separation at Rail-Highway Crossings, 1668  
**Gradient**  
Chemomechanical Assessment of Beams Damaged by Alkali-Silica Reaction, 1317  
Design Provisions for Sections Containing Unstiffened Elements with Stress Gradient, 8  
**Graduate study**  
Improving Enrollment in the Master of Construction Management Program at Bowling Green State University, 1434  
**Grain size**  
Alternative Computation of Dean's Overfill Ratio, 1868  
Mars Soil Mechanical Properties and Suitability of Mars Soil Simulants, 73  
**Granular materials**  
Degradation of a Granular Base under a Flexible Pavement: DEM Simulation, 56

## Granular materials

- Effect of Contact Force Models on Granular Flow Dynamics, 566  
Elastoplastic Model for the Long-Term Behavior Modeling of Unbound Granular Materials in Flexible Pavements, 40  
Granular Material Silos under Dynamic Excitation: Numerical Simulation and Experimental Validation, 1594  
Heat Flow through Soils and Effects on Thermal Storage Cycle in High-Mass Structures, 64  
Influence of Micromaterial Heterogeneity on Strain Localization in Granular Materials, 37  
Input Parameters of Discrete Element Methods, 506  
Limit-State Curve of Base-Course Material and Its Relevance for Resilient Modulus Testing, 795  
Microscopic Evaluation of Strain Distribution in Granular Materials during Shear, 785  
New Stabilized Finite Element Method Embedded with a Cap Model for the Analysis of Granular Materials, 460  
Small-Strain Behavior of Granular Soils. I: Model for Cemented and Uncemented Sands and Gravels, 876  
Visualization of Crushing Evolution in Granular Materials under Compression using DEM, 32

## Granular media

- Hysteresis of Matrix Suction and Capillary Stress in Monodisperse Disk-Shaped Particles, 490  
Minimizing Mass Transfer Effects in Granular Iron Batch Tests Using GEM Reactors, 776

## Graphic methods

- Exploratory Map Animation for Post-Event Analysis of Wildfire Protective Action Recommendations, 1922

## Grasses

- Effectiveness of Bermuda Grass as Vegetative Cover in Grassed Waterway: A Simulated Study, 1196

## Gravel

- Approach to Separate Sand from Gravel for Bed-Load Transport Calculations in Streams with Bimodal Sediment, 1051  
Loading of a Gavel-Buried Steel Pipe Subjected to Rockfall, 913

## Gravity

- Performance of Overburnt Distorted Bricks as Aggregates in Pavement Works, 1352

## Great Lakes

- Frazil Ice Blockage of Water Intakes in the Great Lakes, 1011

## Greens function

- Green's Function of the Linearized de Saint-Venant Equations, 447

## Grid systems

- Assessing the Financial Feasibility of Utility-Provided Backup Power during Project Site Planning, 419  
Double-Layer Prefabricated FRP Grids for Rapid Bridge Deck Construction: Case Study, 208  
Unstructured Grid Finite-Volume Algorithm for Shallow-Water Flow and Scalar Transport with Wetting and Drying, 968  
Validation of a Three-Dimensional Computational Fluid Dynamics Model of a Contact Tank, 1005

## Ground motion

- Blast and Construction Vibration Monitoring and Control: Thirty-Five-Year Perspective, 1971

## 2006 ASCE TRANSACTIONS

- Design and Installation of Deep Benchmarks in Expansive Soil, 1658  
Effects of Ground Motion Parameters and Cyclic Degradation Behavior on Collapse Response of Steel Moment-Resisting Frames, 1592  
Frequency-Dependent Amplification of Unsaturated Surface Soil Layer, 827  
General Approach for Training Back-Propagation Neural Networks in Vibration Control of Multidegree-of-Freedom Structures, 269  
Ground Motion Induced by Train Passage, 455  
Lessons Learned for Ground Movements and Soil Stabilization from the Boston Central Artery, 868  
Microbially Induced Cementation to Control Sand Response to Undrained Shear, 905  
New Measure for Severity of Near-Source Seismic Ground Motion, 1636  
Probabilistic Critical Excitation Method for Earthquake Energy Input Rate, 538  
Return Period of Recorded Ground Motion, 1522  
Safe Distance between Large-Diameter Rock Pipe Bursting and Nearby Buildings and Buried Structures, 1699  
Seismic Site Response for Near-Fault Forward Directivity Ground Motions, 928  
Underground Construction and Ground Movement, 2095
- Ground water**
- Aquifer Diffusivity Estimation from Response to Stream Stage Variation, 1100  
Effects of Local Search Algorithms on Groundwater Remediation Optimization using a Self-Adaptive Hybrid Genetic Algorithm, 278  
Evaluation of Traditional and Nontraditional Optimization Techniques for Determining Well Parameters from Step-Drawdown Test Data, 1135  
Flow Depletion of Semipervious Streams Due to Unsteady Pumping Discharge, 1209  
Groundwater Remediation Design using Multiscale Genetic Algorithms, 1837  
Hydraulic Conductivity of Soil Sorptive Zones Created by In Situ Injection of a Cationic Surfactant, 773  
Optimal Pumping from Skimming Wells, 1118
- Ground-water chemistry**
- Field Monitoring of a Permeable Reactive Barrier for Removal of Chlorinated Organics, 605
- Ground-water flow**
- Decreasing Measuring Errors of a Thermal Groundwater Flowmeter, 1195
- Flow Computation and Mass Balance in Galerkin Finite-Element Groundwater Models, 1054
- Seepage from a Rectangular Ditch to the Groundwater Table, 1192
- Ground-water management**
- Derived Operating Rules for Allocating Recharges and Withdrawals among Unconnected Aquifers, 1803
- Determination of Sustainable Yield in Urban Groundwater Systems: Beijing, China, 1072
- Economic Optimization of Conjunctive Use of Surface Water and Groundwater at the Basin Scale, 1848
- Flow Depletion Induced by Pumping Well from Finite Length of Stream, 1222
- Natural Gradient Tracer Test for a Permeable Reactive Barrier in Denmark. II: Spatial Moments Analysis and Dispersion of Conservative Tracer, 1967

## SUBJECT INDEX

- Uncertainty Analysis of Mound Monitoring for Recharged Water from Surface Spreading Basins, 762
- Zero-Valent Iron Reactive Materials for Hazardous Waste and Inorganics Removal, 2097
- Ground-water pollution**
- Anaerobic Biodegradation of RDX and TCE: Single- and Dual-Contaminant Batch Tests, 1949
- Biodegradation of Tetrachloroethene by Chitin Fermentation Products in a Continuous Flow Column System, 673
- Biologically Mediated Reductive Transformation of Ordnance-Related Compounds by Mixed Aquifer Culture using Acetate as the Sole Carbon Source: Laboratory Treatability Studies for Field Demonstration, 1948
- Column Study Simulating In Situ Bioremediation of Perchlorate using Acetate as an Organic Substrate, 1950
- Effects of Surface-Bound Fe<sup>2+</sup> on Nitrate Reduction and Transformation of Iron Oxide(s) in Zero-Valent Iron Systems at Near-Neutral pH, 658
- Enhancement of Remediation of NAPL Contaminated Fractured Permeable Formations — Modeling Study, 589
- Evaluating Ozone as a Remedial Treatment for Removing RDX from Unsaturated Soils, 763
- Field Monitoring of a Permeable Reactive Barrier for Removal of Chlorinated Organics, 605
- Hydrocarbon Residuals and Containment in Microfine Cement Grouted Sand, 1284
- Identification of Groundwater Pollution Sources using GA-Based Linked Simulation Optimization Model, 1081
- Impact of Agriculture on Water Quality in the North Carolina Middle Coastal Plain, 1191
- Initial Alkalinity Requirement and Effect of Alkalinity Sources in Sulfur-Based Autotrophic Denitrification Barrier System, 709
- Iron-Mediated Aeration: Evaluation of Energy-Assisted Enhancement for In Situ Subsurface Remediation, 683
- Isotopic Fractionation of Tetrachloroethene Undergoing Biodegradation Supported by Endogenous Decay, 681
- Low-Temperature Soil Heating using Renewable Energy, 659
- Multidate Temporal Changes in Chlorinated Solvent Concentrations at 23 Monitored Natural Attenuation Sites, 672
- Oxidation of Methyl *Tert*-Butyl Ether in Aqueous Solution by an Ozone/UV Process, 743
- Oxidative and Reductive Degradation of Mixed Contaminants by Bifunctional Aluminum, 1944
- Remediation of a TCE Plume using a Three-Component Strategy, 1952
- Remediation of RDX-Contaminated Water using Alkaline Hydrolysis, 610
- Transport of Edible Oil Emulsions in Clayey Sands: One-Dimensional Column Results and Model Development, 1095
- Transport of Edible Oil Emulsions in Clayey Sands: 3D Sandbox Results and Model Validation, 1096
- Treatment of Contaminated Soils and Groundwater using ISCO, 1939
- Half space**
- Water Reuse/Recycling and Reclamation in Semiarid Zones: The Israeli Case of Salinization and "Hard" Surfactants Pollution of Aquifers, 675
- Ground-water quality**
- Evaluating Regional Solutions to Salinization and Waterlogging in an Irrigated River Valley, 1166
- Factors Influencing Arsenite Removal by Zero-Valent Iron, 749
- Ground-water recharge**
- Character of Organic Matter in Soil-Aquifer Treatment Systems, 748
- Nitrogen Transformations during Soil-Aquifer Treatment of Wastewater Effluent — Oxygen Effects in Field Studies, 732
- Use of Boron as a Tracer for Recycled Water in Brackish Aquifers, 696
- Grouting**
- Experimental In-Plane Shear Strength Investigation of Reinforced Concrete Masonry Walls, 1478
- Factors Affecting the Creep Behavior of Grouted Sand, 823
- Microbially Induced Cementation to Control Sand Response to Undrained Shear, 905
- Multilamine Macromodel for Concrete Masonry: Formulation and Verification, 1635
- Predicting End Bearing Capacity of Post-Grouted Drilled Shaft in Cohesionless Soils, 822
- Guidelines**
- Construction, Inspection, and Maintenance of FRP Deck Panels, 245
- Gulf of Mexico**
- The Gulf of Mexico Decommissioning Market, 369
- Offshore Decommissioning Cost Estimation in the Gulf of Mexico, 313
- Special Report: The Big Uneasy, 2033
- Gulfs**
- 3D Model Application to Study Residual Flow in the Arabian Gulf, 1891
- Three-Dimensional Modeling of the Ruwais Coastal Area of United Arab Emirates, 1902
- Gypsum**
- Flexural and Shear Strength of Composite Lintels in Glass-Fiber-Reinforced Gypsum Wall Constructions, 1306
- Fracture Toughness of Wood Fiber Gypsum Panels from Size Effect Law, 507
- Leaching of Lime from Fly Ash Stabilized with Lime and Gypsum, 1273
- Predicting Residual Strength in Unsaturated Concrete Exposed to Sulfate Attack, 1298
- Tensile Strength Bearing Ratio and Slake Durability of Class F Fly Ash Stabilized with Lime and Gypsum, 1263
- Half space**
- Automatically Computing the Displacements and Stresses Induced by Three-Dimensional Arbitrarily Shaped Loads in a Transversely Isotropic Medium, 18
- Displacements and Stresses Due to a Uniform Vertical Circular Load in an Inhomogeneous Cross-Anisotropic Half-Space, 12
- Stiffness of a Flexible Circular Footing Embedded in an Elastic Half-Space, 16

## Halogen organic compounds

### Halogen organic compounds

- High-Density Polyethylene Membrane Containing Fe<sup>0</sup> as a Contaminant Barrier, 690
- Iron Oxide Enhanced Chlorine Decay and Disinfection By-Product Formation, 767
- MS2 Inactivation by Chloride-Assisted Electrochemical Disinfection, 584
- Oxidative and Reductive Degradation of Mixed Contaminants by Bifunctional Aluminum, 1944

### Harbor facilities

- Application of GIS Technologies in Port Facilities and Operations Management, 2048

### Harbors

- Application of a Bottom Boundary Layer Model in Contrasting Wave and Current Environments: Grays Harbor, Washington, 1890
- Application of GIS Technologies in Port Facilities and Operations Management, 2048
- Evaluation of Contaminant Resuspension Potential during Cap Placement at Two Dissimilar Sites, 639
- Multiobjective Strategic Evaluation for Urban Development in Kaohsiung, Taiwan: Case Study, 1791
- Prediction of Long Forcing Waves for Harbor Agitation Studies, 1871
- Solidification of New Zealand Harbor Sediments using Cementitious Materials, 1294
- Water Exchange and Sedimentation in an Estuarine Tidal Harbor using Three-Dimensional Simulation, 1893

### Hardness

- Lime-Soda Softening Process Modifications for Enhanced NOM Removal, 600

### Hawaii

- Correlation of Aggregate Test Parameters to Hot Mix Asphalt Pavement Performance in Hawaii, 1672
- Use of Boron as a Tracer for Recycled Water in Brackish Aquifers, 696

### Hazardous materials

- Optimal Siting of Fire Stations using GIS and ANT Algorithm, 286
- Zero-Valent Iron Reactive Materials for Hazardous Waste and Inorganics Removal, 2097

### Hazardous wastes

- Bioremediation of Hazardous Wastes — A Review, 1946
- Design Factors Affecting the Flow of Water through Below-Ground Concrete Vaults, 737
- Hydraulic Conductivity of Soil Sorptive Zones Created by In Situ Injection of a Cationic Surfactant, 773
- Natural Attenuation Assessment using Mineral Data, 1968
- Organic Hazardous Substances in Graywater from Swedish Households, 700
- Transformation of DDT and its Metabolites by Various Abiotic Methods, 662

### Hazards

- Case Study: Mapping Tsunami Hazards Associated with Debris Flow into a Reservoir, 931
- Evacuation Route Selection Based on Tree-Based Hazards using Light Detection and Ranging and GIS, 1695

## 2006 ASCE TRANSACTIONS

### Global System Considerations for Progressive Collapse with Extensions to Other Natural and Man-Made Hazards, 1406

### Hybrid Course Linking Natural Hazards with Probability and Statistics, 1425

### Model for Automated Monitoring of Fall Hazards in Building Construction, 360

### Real Estate Market Response to Coastal Flood Hazards, 1936

### Safety Hazard Identification on Construction Projects, 308

### Spatial Uncertainty Modeling of Climate Processes for Extreme Hydrogeomorphological Events Hazard Monitoring, 758

### Head loss

### Real Local Losses Estimation for On-Line Emitters Using Empirical and Numerical Procedures, 1224

### Health care facilities

#### A Healing Place, 1998

#### Key Performance Indicators for Strategic Healthcare Facilities Maintenance, 322

### Health hazards

#### Improving the Safety and Efficiency of Materials Transfer at a Construction Site by using an Elevator, 371

#### Particulate Matter from Stone Crushing Industry: Size Distribution and Health Effects, 628

#### Screening Level Risk Assessment of Heavy Metal Contamination in Cleveland Area Commons, 627

### Heat transfer

#### Effects of Environmental Action on Thermal Stress Analysis of Karaj Concrete Arch Dam, 487

#### Finite-Element Modeling and Calibration of Temperature Prediction of Hydrating Portland Cement Concrete Pavements, 1295

#### Heat Flow through Soils and Effects on Thermal Storage Cycle in High-Mass Structures, 64

#### Thermal Transfer Analysis of a Freezing Soil Medium with an Embedded Pipeline, 181

### Heat treatment

#### Low-Temperature Soil Heating using Renewable Energy, 659

### Heaving

#### Numerical Modeling of Thaw Penetration in Frozen Ground Subject to Low-Intensity Infrared Heating, 180

### Heaving

#### Investigation of Heaving at Holloman Air Force Base, New Mexico, 1370

#### Small-Strain Shear Moduli of Chemically Stabilized Sulfate-Bearing Cohesive Soils, 808

#### Volume Change Behaviors of Expansive Soils Stabilized with Recycled Ashes and Fibers, 1292

### Heavy metals

#### Bioremediation of Hazardous Wastes — A Review, 1946

#### Dynamic Characteristics of Particle Size Distribution in Highway Runoff: Implications for Settling Tank Design, 695

#### EDTA-Enhanced Washing for Remediation of Pb- and/or Zn-Contaminated Soils, 730

## SUBJECT INDEX

- Effect of Cd(II) on Different Bacterial Species Present in a Single Sludge Activated Sludge Process for Carbon and Nutrient Removal, 602
- Evaluating an Electrokinetically Driven Extraction Method for Measuring Heavy Metal Soil Contamination, 641
- Handling of Urban Snow with Regard to Snow Quality, 612
- Heavy Metals Removal from Acidic and Saline Soil Leachate using Either Electrochemical Coagulation or Chemical Precipitation, 660
- Mechanical Properties and Environmental Assessment of Mortars Containing Metallic Oxides, 706
- Potential of Wood Waste Ash as an Additive in Concrete, 1330
- Screening Level Risk Assessment of Heavy Metal Contamination in Cleveland Area Commons, 627
- Selective Removal of Heavy Metals from Industrial Wastewater using Maghemite Nanoparticle: Performance and Mechanisms, 679
- Storm Water Detention Ponds: Modeling Heavy Metal Removal by Plant Species and Sediments, 717
- TCLP Heavy Metal Leaching of Personal Computer Components, 638
- Height**
- Local Geoid Improvement using GPS and Leveling Data: Case Study, 1655
- Precise Height Determination using Leap-Frog Trigonometric Leveling, 1657
- Herbicides**
- Measured and Predicted Herbicide Removal by Mulch, 702
- Heterogeneity**
- Influence of Micromaterial Heterogeneity on Strain Localization in Granular Materials, 37
- Simulation of Multidimensional Binary Random Fields with Application to Modeling of Two-Phase Random Media, 496
- High occupancy vehicles**
- Benefit-Cost Analysis of Variable Pricing Projects: QuickRide HOT Lanes, 1682
- Benefit-Cost Analysis of Variable Pricing Projects: SR-91 Express Lanes, 1683
- High strength concretes**
- Case Study of a High-Performance Concrete Bridge in Tennessee, 1992
- Evaluation of Early Strength Requirement of Concrete for Slab Replacement using Accelerated Pavement Testing, 1749
- High-Strength Self-Compacting Concrete Exposed to Fire Test, 1349
- Seismic Behavior of High-Strength Concrete Columns Confined by Fiber-Reinforced Polymer Tubes, 243
- Torsional Design of Hybrid Concrete Box Girders, 136
- High strength steel**
- Behavior of High Strength Structural Steel at Elevated Temperatures, 1631
- Numerical Simulation of High-Strength Steel Box-Shaped Columns Failing in Local and Overall Buckling Modes, 1492
- Shear Behavior of Corrugated Web Bridge Girders, 1457
- Highway construction**
- Fast-Track Urban Freeway Rehabilitation with 55-H Weekend Closures: I-710 Long Beach Case Study, 334
- Implementation of Automated Travel-Time Information and Public Reaction on Urban Highway Rehabilitation, 1752
- Inventive Maintenance, 2017
- Legal Challenge to a Best-Value Procurement System, 1906
- Lighting Requirements for Nighttime Highway Construction, 331
- Measuring Project Level Productivity on Transportation Projects, 319
- Model for Analysis of Factors Affecting Construction Schedule in Highway Work Zones, 1717
- Neural Network-Wavelet Microsimulation Model for Delay and Queue Length Estimation at Freeway Work Zones, 1697
- Optimal Planning and Scheduling for Repetitive Construction Projects, 1238
- Using GPS to Measure the Impact of Construction Activities on Rural Interstates, 339
- Validation of a Model for Predicting Schedule Changes in Highway Work Zones — Case Studies, 1733
- Highway design**
- Evaluating the Safety Risk of Narrow Medians using Reliability Analysis, 1701
- Highway Route Optimization Based on Accessibility, Proximity, and Land-Use Changes, 1708
- Model for Three-Dimensional Highway Alignment, 1764
- Highway maintenance**
- Assessing Permanent Deformation Resistance of High Modulus Asphalt Mixtures, 1704
- Evacuation Route Selection Based on Tree-Based Hazards using Light Detection and Ranging and GIS, 1695
- Inventive Maintenance, 2017
- Simple Model for Structural Evaluation of Asphalt Concrete Pavements at the Network Level, 1141
- Turnpike Transformation, 2038
- Highway management**
- 3D Calculation of Stopping-Sight Distance from GPS Data, 1739
- Finite-Element Crash Test Simulation of New York Portable Concrete Barrier with I-Shaped Connector, 1481
- Reliable Real-Time Framework for Short-Term Freeway Travel Time Prediction, 1765
- Vehicle Level Evaluation of Loop Detectors and the Remote Traffic Microwave Sensor, 1686
- Highway safety**
- Evacuation Route Selection Based on Tree-Based Hazards using Light Detection and Ranging and GIS, 1695
- Evaluating the Safety Risk of Narrow Medians using Reliability Analysis, 1701
- Geometric Models to Calculate Left-Turn Sight Distance for Signalized Intersections on Horizontal Curves, 1738
- Highway transportation**
- Moving On, 2018
- Paving America From Coast to Coast, 2016

## Highway transportation

- Speed Distribution Curves under Mixed Traffic Conditions, 1713
- Highways**
- Airfield and Highway Pavement: Meeting Today's Challenges with Emerging Technologies, 2047
- Defeating Delays, 2028
- Dynamic Characteristics of Particle Size Distribution in Highway Runoff: Implications for Settling Tank Design, 695
- Estimating Pollutant Mass Accumulation on Highways during Dry Periods, 711
- Full-Scale Field Tests on Flexible Pipes under Live Load Application, 1366
- Hydraulic Performance Curves for Highway Culverts, 978
- Measured and Predicted Herbicide Removal by Mulch, 702
- Methodology to Develop Median Barrier Warrant Criteria, 1691
- Modeling Driver Visual Demand on Three-Dimensional Highway Alignments, 1700
- Oil and Grease Measurement in Highway Runoff — Sampling Time and Event Mean Concentrations, 629
- Reversible Lane Systems: Synthesis of Practice, 1766
- Safety Analysis of Moving Road Vehicles on a Long Bridge under Crosswind, 478
- Safety Impacts of Differential Speed Limits for Trucks and Passenger Cars on Rural Interstate Highways: A Modified Empirical Bayes Approach, 1665
- Structural Adequacy of Flexible Pavements with Types and Widths of Shoulders, 1670
- Hinges**
- Development, Shake Table Testing, and Design of FRP Seismic Restrainers, 152
- Historic sites**
- Analysis and Solution to Human-Induced Lateral Vibrations on a Historic Footbridge, 104
- Challenges of Underpinning Two Landmark Buildings, 1985
- Experimental In-Plane Behavior of Tuff Masonry Strengthened with Cementitious Matrix — Grid Composites, 210
- Probabilistic Model for the Assessment of Historic Buildings under Permanent Loading, 1361
- Structural Analysis of the Wooden Structure of the Historical Building of Ali Qapu, 1616
- Structural Monitoring and Integrity Assessment of Medieval Towers, 1605
- Tipon: Water Engineering Masterpiece of the Inca Empire, 2093
- History**
- Battery-Joralemon Street Tunnel, 1374
- Evolution of Bricks and Brick Masonry in the Early History of its Use in the Region of Today's Serbia, 1341
- HAZUS — Its Development and Its Future, 1926
- Historic Discharge Measurements in Three Rhine Branches, 945
- Inventive Maintenance, 2017
- Offshore Technology in Civil Engineering: Hall of Fame Papers from the Early Years, 2077
- Paving America From Coast to Coast, 2016
- Tipon: Water Engineering Masterpiece of the Inca Empire, 2093

## 2006 ASCE TRANSACTIONS

- Turnpike Transformation, 2038
- Using Patents to Advance the Civil Engineering Profession, 2020
- Holes**
- In Situ Pore Pressure Responses of Native Peat and Soil under Train Load: A Case Study, 904
- Hollow sections**
- Cold-Formed Stainless Steel Sections Subjected to Web Crippling, 1451
- Experimental Study of Offset HSS Connections, 1511
- Static Strength of Cracked Square Hollow Section T Joints under Axial Loads. I: Experimental, 1475
- Static Strength of Cracked Square Hollow Section T Joints under Axial Loads. II: Numerical, 1476
- Honeycomb structures**
- Determination of Honeycomb Material Properties: Existing Theories and an Alternative Dynamic Approach, 74
- Dynamic Characteristics and Effective Stiffness Properties of Honeycomb Composite Sandwich Structures for Highway Bridge Applications, 203
- Fatigue Behavior and Nondestructive Evaluation of Full-Scale FRP Honeycomb Bridge Specimen, 145
- Study of a Honeycomb-Type Rigidified Inflatable Structure for Housing, 1603
- Hong Kong**
- Construction Delays in Hong Kong Civil Engineering Projects, 352
- Deflection of the Vertical Components from GPS and Precise Leveling Measurements in Hong Kong, 1654
- Evaluating the Impact of Vessel-Traffic Interference on Container Terminal Capacity, 1862
- Exploratory Study of Knowledge Sharing in Contracting Companies: A Sociotechnical Perspective, 380
- How Relational are Construction Contracts?, 1411
- Laboratory Studies of Two Common Saprolic Soils in Hong Kong, 864
- Market Disequilibrium and Urban Land Shortages: Analysis of Policy and Patterns in Hong Kong, 1780
- Safety Climate in Construction Industry: A Case Study in Hong Kong, 345
- Housing**
- Impact of Property Management Services on Affordable Housing Residents in Atlanta, Georgia, 1387
- Incomplete Information Analysis for the Origin-Destination Survey Table, 1794
- Influence of School Accessibility on Housing Values, 1785
- Relationship between Housing Affordability and Economic Development in Mainland China — Case of Shanghai, 1779
- Seismic Behavior of Sheathed Cold-Formed Structures: Numerical Study, 1494
- Seismic Behavior of Sheathed Cold-Formed Structures: Physical Tests, 1495
- Supply Chain Analysis and Modeling for the Manufactured Housing Industry, 1771
- Supply Chain Simulation Modeling for the Manufactured Housing Industry, 1797
- Hudson River**
- Comparison of SF<sub>6</sub> and Fluorescein as Tracers for Measuring Transport Processes in a Large Tidal River, 774

## SUBJECT INDEX

## Hydraulic jump

### Human factors

- Exploiting Knowledge Management: The Engineering and Construction Perspective, 1237  
Frequency Dependence of Human Response to Wind-Induced Building Motion, 1468  
Indirect Discrimination in Construction Organizations and the Impact on Women's Careers, 1250  
Methodology for Usability Evaluation of Corporate Memory Design Reuse Systems, 274  
Reliability and Human Factors in Geotechnical Engineering, 836

### Humidity

- Field Performance of a Compacted Clay Landfill Final Cover at a Humid Site, 906

### Hurricanes

- Best Practices of Bridge System Management—A Synthesis, 1258  
Effects of Flood Control Structures on Flood Response for Hurricane Floyd in the Brandywine Creek Watershed, Pennsylvania, 1115  
HAZUS — Its Development and Its Future, 1926  
HAZUS-MH Hurricane Model Methodology. I: Hurricane Hazard, Terrain, and Wind Load Modeling, 1930  
HAZUS-MH Hurricane Model Methodology. II: Damage and Loss Estimation, 1931  
Hurricane Katrina: Performance of Transportation Systems, 2074  
Hurricane Mitigation of the Florida House Learning Center, 1382  
Lessons from Katrina, 2009  
Special Report: The Big Uneasy, 2033  
Standards Governing Glazing Design in Hurricane Regions, 94

- Two-Level Integrated Optimization System for Planning of Emergency Evacuation, 1751  
Validation of Finite-Element Analyses for Storm Shelters, 89

### Hybrid methods

- Distributed Hybrid Genetic Algorithms for Structural Optimization on a PC Cluster, 1625  
Double-Pass Photovoltaic-Thermal Solar Air Collector with Compound Parabolic Concentrator and Fins, 433  
Effects of Local Search Algorithms on Groundwater Remediation Optimization using a Self-Adaptive Hybrid Genetic Algorithm, 278  
Event-Driven Control System for Geographically Distributed Hybrid Simulation, 1446  
Experimental Evaluation of Posttensioned Hybrid Coupled Wall Subassemblies, 1538  
Framework to Support the Representations of Semantic Mappings for a Hybrid Integration Strategy, 268  
Hybrid Course Linking Natural Hazards with Probability and Statistics, 1425  
Hybrid Data Mining/Genetic Shredding Algorithm for Reliability Assessment of Structural Systems, 1582  
Hybrid, Markov Chain-Based Model for Daily Streamflow Generation at Multiple Catchment Sites, 1097  
Hydrogen Production by Plasma Electrolysis, 431  
Multifunctional Hybrid GFRP/Steel Joint for Concrete Slab Structures, 244  
Novel Hybrid Filter for the Treatment of Septic Tank Effluent, 685

### Numerical Model for the Analysis of Unbonded Pre-stressed Members, 1442

### Operational Optimization and Mass Balances in a Two-Stage MBR Treating High Strength Pet Food Wastewater, 691

### Seismic Design and Analytical Modeling of Posttensioned Hybrid Coupled Wall Subassemblies, 1539

### Torsional Design of Hybrid Concrete Box Girders, 136

### Hydraulic conductivity

#### Compatibility with Jet A-1 of a GCL Subjected to Freeze — Thaw Cycles, 920

#### Estimating the Hydraulic Conductivity of Landfilled Municipal Solid Waste using the Borehole Permeameter Test, 671

#### Evaluating the Long-Term Performance of Geosynthetic Clay Liners Exposed to Freeze-Thaw, 804

#### General Validity of Conductivity Means in Unsaturated Flow Models, 1125

#### Hydraulic Conductivity of Soil Sorption Zones Created by In Situ Injection of a Cationic Surfactant, 773

#### Identification of Poroelastic Constants of "Tight" Rocks from Laboratory Tests, 33

#### Membrane Behavior of Two Backfills from Field-Constructed Soil-Bentonite Cutoff Walls, 892

#### Microanalytical Characterizations of Eroded and Slaked Mudstone Proposed as Landfill Liner Material, 1953

#### Probability Density Functions in the Analysis of Hydraulic Conductivity Data, 1116

#### Site-Specific Study on Stabilization of Acid-Generating Mine Tailings using Coal Fly Ash, 1277

#### Slug Test Analysis in Vertical Cutoff Walls. I: Analysis Methods, 817

#### Slug Test Analysis in Vertical Cutoff Walls. II: Applications, 818

### Hydraulic design

#### Hydraulic Analysis and Direct Design of Multiple Outlets Pipelines Laid on Flat and Sloping Lands, 1226

#### Innovative Energy-Dissipating Hood, 1006

#### Standard Guidelines for the Design of Urban Stormwater Systems ASCE/EWRI 45-05; Standard Guidelines for Installation of Urban Stormwater Systems ASCE/EWRI 46-05; Standard Guidelines for the Operation and Maintenance of Urban Stormwater Systems ASCE/EWRI 47-05, 2089

### Hydraulic engineering

#### Fuzzy Logic Model for Equilibrium Scour Downstream of a Dam's Vertical Gate, 1038

#### Nonlinear PLS Method for Side Weir Flows, 1219

### Hydraulic jets

#### Clear Water Local Scour by Submerged Three-Dimensional Wall Jets: Effect of Tailwater Depth, 989

#### Forces on Plunge Pool Slabs: Influence of Joints Location and Width, 936

### Hydraulic jump

#### 3D Simulation of Combining Flows in 90° Rectangular Closed Conduits, 954

#### Energy Dissipation on Block Ramps, 935

#### Hydraulic Jumps in Sloping Channels: Sequent Depth Ratio, 1037

#### Particle Image Velocity Measurements of Undular and Hydraulic Jumps, 1060

## Hydraulic loads

### Hydraulic loads

Forces on Plunge Pool Slabs: Influence of Joints Location and Width, 936

### Hydraulic models

Adjusting Nodal Demands in SCADA Constrained Real-Time Water Distribution Network Models, 942

Combined Hydraulic and Black-Box Models for Flood Forecasting in Urban Drainage Systems, 1131

Evaluating Regional Solutions to Salinization and Waterlogging in an Irrigated River Valley, 1166

From a NEXRAD Rainfall Map to a Flood Inundation Map, 1074

Functional Relationships of Resistance in Wide Flood Plains with Rigid Unsubmerged Vegetation, 948

Godunov-Type Solutions for Transient Flows in Sewers, 1010

Impact of Sensor Detection Limits on Protecting Water Distribution Systems from Contamination Events, 1833

Soil Hydraulic Properties Affecting Discharge Uniformity of Gravity-Fed Subsurface Drip Irrigation Systems, 1225

### Hydraulic networks

Adjusting Nodal Demands in SCADA Constrained Real-Time Water Distribution Network Models, 942

Impact of Sensor Detection Limits on Protecting Water Distribution Systems from Contamination Events, 1833

### Hydraulic properties

Sensitivity Analysis of Soil Hydraulic Properties on Subsurface Water Flow in Furrows, 1211

### Hydraulic roughness

Errors in the Bed Shear Stress as Estimated from Vertical Velocity Profile, 1220

Functional Relationships of Resistance in Wide Flood Plains with Rigid Unsubmerged Vegetation, 948

### Hydraulic structures

Case Study: Application of GPR to Detection of Hidden Dangers to Underwater Hydraulic Structures, 932

Energy Dissipation on Block Ramps, 935

Erosive Wear of Hydraulic Concrete with Low Steel Fiber Content, 1065

Flood Frequency Analysis for Sicily, Italy, 1082

Hydraulics of Plane Plunge Pool Scour, 976

Mean Flow and Turbulence Structure in Vertical Slot Fishways, 1007

Scattering of Linear Water Waves by a Fixed and Infinitely Long Rectangular Structure Parallel to a Vertical Wall in Oblique Seas, 1865

Similarity of Large-Scale Turbulence in Experiments on Local Scour at Cylinders, 934

Standard Guidelines for the Design of Urban Subsurface Drainage (ASCE/EWRI 12-05); Standard Guidelines for the Installation of Urban Subsurface Drainage (ASCE/EWRI 13-05); and Standard Guidelines for the Operation and Maintenance of Urban Subsurface Drainage (ASCE/EWRI 14-05), 2090

### Hydraulics

Bottom Aeration of Stepped Spillways, 1014

Control of Scour at Vertical Circular Piles under Waves and Current, 959

## 2006 ASCE TRANSACTIONS

Developing a Web-Based System for Large-Scale Environmental Hydraulics Problems with Application to Oil Spill Modeling, 264

Development of Air Concentration on Chute Spillways, 1023

Downstream Hydraulic Geometry of Alluvial Channels, 1067

Estimating Evaporation from Bare Soil using Soil Moisture Data, 1181

Experimental Study of Surcharged Flow at Combining Sewer Junctions, 1058

Explicit Formulation of the Shields Diagram for Incipient Motion of Sediment, 1041

Hydraulic Optimization of Transient Protection Devices using GA and PSO Approaches, 1805

Scour Countermeasures for Wing-Wall Abutments, 988

Scour Downstream of an Apron Due to Submerged Horizontal Jets, 957

Tuning of Robust Distant Downstream PI Controllers for an Irrigation Canal Pool. I: Theory, 1204

Tuning of Robust Distant Downstream PI Controllers for an Irrigation Canal Pool. II: Implementation Issues, 1205

### Hydrocarbons

Compatibility with Jet A-1 of a GCL Subjected to Freeze—Thaw Cycles, 920

Control of PAHs from Incineration by Activated Carbon Fibers, 650

Hydrocarbon Residuals and Containment in Microfine Cement Grouted Sand, 1284

Zirconia-Supported Copper Oxide — A Catalyst for Removal of Vehicular Exhaust Gas Pollutants, 707

### Hydrodynamic pressure

Forces on Plunge Pool Slabs: Influence of Joints Location and Width, 936

Transverse Pavement Grooving against Hydroplaning. I: Simulation Model, 1709

Transverse Pavement Grooving against Hydroplaning. II: Design, 1710

### Hydrodynamics

3D Model Application to Study Residual Flow in the Arabian Gulf, 1891

Case Study: Refinement of Hydraulic Operation of a Complex CSO Storage/Treatment Facility by Numerical and Physical Modeling, 944

Coastal Dynamics 2005 -- State of the Practice, 2055

Earthquake Hydrodynamic Pressure on Dams, 1046

Experimental Study on the Hydrodynamics of a Floating Production, Storage, and Offloading System, 1861

Growth and Decay of Estuary Ice Cover, 184

Hydrodynamic Behavior of Asymmetric Oscillatory Boundary Layers at Low Reynolds Numbers, 1040

Hydrodynamic Characterization and Modeling of the Arabian Gulf, 1859

Integrated Hydrodynamic and Water Quality Modeling System to Support Nutrient Total Maximum Daily Load Development for Wissahickon Creek, Pennsylvania, 644

Method of Fundamental Solutions for Three-Dimensional Stokes Flow in Exterior Field, 467

Modeling Near-Shore Waves, Surface Rollers, and Undertow Velocity Profiles, 1896

## SUBJECT INDEX

## Hydrology

- Performance of Parallel Implementations of an Explicit Finite-Volume Shallow-Water Model, 255  
Refinement Indicator for Mesh Adaption in Shallow-Water Modeling, 1015  
Response Amplitude and Hydrodynamic Force for a Buoy over a Convex, 1864
- Hydroelectric power generation**  
Monitoring Snow-Cover Depletion by Coupling Satellite Imagery with a Distributed Snowmelt Model, 1808  
Stochastic Dynamic Programming with Risk Consideration for Transbasin Diversion System, 1812
- Hydrogen**  
Sustainability and Economics of the Advanced High-Temperature Reactor, 432  
Technology Evaluation of Hydrogen Light-Duty Vehicles, 663
- Hydrogen sulfides**  
Sulfur Impregnation on Activated Carbon Fibers through H<sub>2</sub>S Oxidation for Vapor Phase Mercury Removal, 615
- Hydrogeology**  
Field Performance of a Compacted Clay Landfill Final Cover at a Humid Site, 906  
Uncertainty Analysis of Mound Monitoring for Recharged Water from Surface Spreading Basins, 762
- Hydrographic surveys**  
Case Study of Precision of GPS Differential Correction Strategies: Influence on aDcp Velocity and Discharge Estimates, 955
- Hydrographs**  
Development of Optimal and Physically Realizable Unit Hydrograph, 1134  
Evaluation of the Nash—Sutcliffe Efficiency Index, 1132  
Hybrid, Markov Chain-Based Model for Daily Streamflow Generation at Multiple Catchment Sites, 1097  
Increasing Stormwater Outfall Duration, Magnitude, and Volume through Combined Sewer Separation, 1119  
Instantaneous Unit Hydrograph Evaluation for Rainfall-Runoff Modeling of Small Watersheds in North and South Central Texas, 1218  
NRCS (SCS) Synthetic Curvilinear Dimensionless Unit Hydrograph, 1236  
Optimal Instantaneous Unit Hydrograph from Multistorm Data, 1198  
Storm-Water Predictions by Dimensionless Unit Hydrograph, 1210
- Hydrologic data**  
Bat Echolocation Interfering with Ultrasonic Sensors, 1069  
Estimating 7Q10 Confidence Limits from Data: A Bootstrap Approach, 1821  
Reservoir Storage Curve Estimation Based on Remote Sensing Data, 1087  
Updated Precipitation Frequency Estimates for Kansas City: Comparison with TP-40 and HYDRO-35, 1092
- Hydrologic models**  
Analyses of Drought Flow in Recession Period, 1085  
Artificial Neural Network Models of Daily Pan Evaporation, 1077  
Assessment of Soil Moisture Dynamics of the Nebraska Sandhills using Long-Term Measurements and a Hydrology Model, 1216  
Comparative Analysis of Data-Driven and GIS-Based Conceptual Rainfall-Runoff Model, 1070  
Estimating Infiltration in the Upper Split Wash Watershed, Yucca Mountain, NV, 1083  
Evaluation of the Nash—Sutcliffe Efficiency Index, 1132  
Flood Estimation by GIUH-Based Clark and Nash Models, 1124  
Flow Computation and Mass Balance in Galerkin Finite-Element Groundwater Models, 1054  
From a NEXRAD Rainfall Map to a Flood Inundation Map, 1074  
Gridded Snowmelt and Rainfall-Runoff CWMS Hydrologic Modeling of the Red River of the North Basin, 1080  
Hydrologic Modeling Inventory: Cooperative Research Effort, 1175  
Hydrologic Modeling of an Eastern Pennsylvania Watershed with NEXRAD and Rain Gauge Data, 1128  
Modified Kostiakov Infiltration Function: Accounting for Initial and Boundary Conditions, 1230  
Nearshore Wave Modeling with High-Order Bousinesq-Type Equations, 1887  
Parameter Estimation for the Nonlinear Muskingum Model using the BFGS Technique, 1217  
Quantitative Estimation of Reservoir Sedimentation from Three Typhoon Events, 1109  
*RiverSpill*: A National Application for Drinking Water Protection, 970  
Runoff and Sediment Yield Modeling using Artificial Neural Networks: Upper Siwane River, India, 1078  
Stochastic Optimization of the Highland Lakes System in Texas, 1807  
Time-Step Dependency of Infiltration Errors in the HSPF Model, 1102  
Using Radar Data to Partition Precipitation into Rain and Snow in a Hydrologic Model, 1093  
Validation of the Hydrological Processes in a Hydrological Model, 1117  
Watershed Surface and Subsurface Spatial Intraflows Model, 1071
- Hydrology**  
Comparison of Two Nonparametric Alternatives for Stochastic Generation of Monthly Rainfall, 1094  
Evaluating Bioretention Hydrology and Nutrient Removal at Three Field Sites in North Carolina, 1232  
Fuzzy Analysis of Slope-Area Discharge Estimates, 1171  
Hydrological Evaluation of Septic Disposal Field Design in Sloping Terrains, 731  
Integrated Economic, Hydrologic, and Institutional Analysis of Policy Responses to Mitigate Drought Impacts in Rio Grande Basin, 1851  
Methods for Developing Naturalized Monthly Flows at Gaged and Ungaged Sites, 1076  
Stochastic Streamflow Simulation using SAMS-2003, 1177

## Hydrology

- Updated Precipitation Frequency Estimates for Kansas City: Comparison with TP-40 and HYDRO-35, 1092  
Validation of the Hydrological Processes in a Hydrological Model, 1117  
Watershed and River Systems Management Program: Overview of Capabilities, 1174  
Watershed Environmental Hydrology Model: Environmental Module and Its Application to a California Watershed, 1099  
Watershed Surface and Subsurface Spatial Intraflows Model, 1071  
Watershed-Scale Impacts of Forest Buffers on Water Quality and Runoff in Urbanizing Environment, 1815

## Hydromechanics

- Elastoplastic Damage Modeling in Unsaturated Rocks and Applications, 23

## Hydrometeorology

- Updated Precipitation Frequency Estimates for Kansas City: Comparison with TP-40 and HYDRO-35, 1092

## Hydrostatic pressure

- Postbuckling of Moderately Thick Imperfect Rings under External Pressure, 569

- Structural Stability of Concrete Gravity Dams Strengthened by Rockfill Buttressing: Hydrostatic Load, 926

## Hyperbolic parabolic shells

- Evaluation of Distress in Supports of Hyperbolic Paraboloid Shell, 1364

## Hysteresis

- Behavior of Unsaturated Layered Soil Columns during Infiltration, 1105

- Energy Evaluation for Ramberg — Osgood Hysteretic Model, 529

- Generalized Bouc — Wen Model for Highly Asymmetric Hysteresis, 495

- Hysteresis of Matrix Suction and Capillary Stress in Monodisperse Disk-Shaped Particles, 490

- Hysteretic Model of Stiffened Shear Panel Dampers, 1486

- New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. I: Formulation, 571

- Reversed-Cyclic Behavior of a Novel Heavy Timber Tube Connection, 1568

- Simple Phenomenological Model for Reinforcing Steel under Arbitrary Load, 1542

- Unloading and Reloading Stress — Strain Model for Confined Concrete, 1449

## Ice

- Growth and Decay of Estuary Ice Cover, 184

- Ice Stresses in Reservoirs: Effect of Water Level Fluctuations, 183

## Ice cover

- Hydrodynamics of Mesotidal Estuary in Winter, 185

- Modeling of Lake Ice Characteristics in North America using Climate, Geography, and Lake Bathymetry, 187

## Ice forces

- Formation of Breakup Ice Jams at Bridges, 1056

## 2006 ASCE TRANSACTIONS

## Ice formation

- Experimental Study of Ice Jam Formation Dynamics, 186

- Formation of Breakup Ice Jams at Bridges, 1056

- Laboratory Experiments on Frazil-Size Characteristics in a Counterrotating Flume, 941

- Modeling of Lake Ice Characteristics in North America using Climate, Geography, and Lake Bathymetry, 187

## Ice jams

- Experimental Study of Ice Jam Formation Dynamics, 186

- Formation of Breakup Ice Jams at Bridges, 1056

## Ice sheets

- Formation of Breakup Ice Jams at Bridges, 1056

## Identification

- Elastic Constants Identification of Composite Materials using Single Angle-Ply Laminate, 560

- Hyperelasticity Model for Finite-Element Analysis of Natural and High Damping Rubbers in Compression and Shear, 440

- Identification of Contaminant Sources in Water Distribution Systems using Simulation — Optimization Method: Case Study, 1827

- Implementation of a Feasible Control Design Process Incorporating Robustness Criteria for Wind-Excited High-Rise Buildings, 1448

- Neural Networks and Principal Component Analysis for Identification of Building Natural Periods, 279

- Overview of Vibrational Structural Health Monitoring with Representative Case Studies, 174

- System Identification and Damage Detection of a Prestressed Concrete Beam, 1606

## Illinois

- Assessment of Potential Seismic Damage to Residential Unreinforced Masonry Buildings in Northern Illinois, 1979

- An Avoidable Tragedy, 2039

- A Good Move, 2037

- Serpentine Span, 2000

- Through it All, 2004

- Validating Wind-Induced Response of Tall Buildings: Synopsis of the Chicago Full-Scale Monitoring Program, 1588

## Imaging techniques

- Analysis of Factors Affecting Strain Distribution in Geosynthetics, 777

- Automated Measurement of Railway Ballast Angularity, 1331

- Constriction Size of Geotextile Filters, 2

- Distribution Deviation of Large Aggregates from Uniformity in Waste Containment Concrete. I: Quantitative Model Formulation, 1268

- Effect of Ozone on Filamentous Bulking in a Laboratory Scale Activated Sludge Reactor using Respirometry and INTI-Dehydrogenase Activity, 713

- Exploratory Map Animation for Post-Event Analysis of Wildfire Protective Action Recommendations, 1922

- Global Behaviors of a Round Buoyant Jet in a Countercflow, 991

- Improved Design for Vision-Based Incident Detection in Transportation Systems using Real-Time View Transformations, 1755

## SUBJECT INDEX

## Inelastic action

- In Field Soil Characterization: Approach Based on Texture Image Analysis, 787  
Measuring System for Cracks in Concrete using Multitemporal Images, 1651  
Multimodal Image Retrieval from Construction Databases and Model-Based Systems, 365  
Urban Origins/Destinations from High-Resolution Remote Sensing Images, 1783  
Visualizing Search and Solution Spaces in the Optimum Design of Biaxial Columns, 254
- Impact**  
Loading of a Gavel-Buried Steel Pipe Subjected to Rockfall, 913  
Three-Degree-of-Freedom Rigid Model for Seismic Analysis of Cracked Concrete Gravity Dams, 537
- Impact loads**  
Experimental Evaluation of Dynamic Effects for a Selected Highway Bridge, 1391
- Imperfections**  
Compression Behavior of Nonslender Cylindrical Steel Members with Small and Large-Scale Geometric Imperfections, 1560  
Design Analysis for Buckling of Tanks and Silos, 1443  
Postbuckling Analysis of Geometrically Imperfect Conical Shells, 574
- Implementation**  
Tuning of Robust Distant Downstream PI Controllers for an Irrigation Canal Pool. II: Implementation Issues, 1205
- In situ tests**  
Assessment of Variable Uncertainties for Reliability-Based Design of Foundations, 888  
CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, 873  
Data Interpretation for In Situ Measurements of Cohesive Sediment Erosion, 990  
In Situ Pore Pressure Responses of Native Peat and Soil under Train Load: A Case Study, 904  
Method for Measuring Air-Immiscible Liquid Partition Coefficients, 599  
Resistance Factors for Use in Shallow Foundation LRFD, 889  
Standard Penetration Test-Based Probabilistic and Deterministic Assessment of Seismic Soil Liquefaction Potential, 10  
Structural Monitoring and Integrity Assessment of Medieval Towers, 1605  
Study of In Situ Pavement Material Properties Determined from FWD Testing, 1745  
Vibrational Tension Measurement of External Tendons in Segmental Posttensioned Bridges, 161
- Incentives**  
Price and Nonprice Criteria for Contractor Selection, 367
- Incineration**  
Catalytic Incineration of Acrylonitrile with Platinum Supported on  $\text{Al}_2\text{O}_3$ , 751
- India**  
Assessment of the Impact of Improvement Measures on Air Quality: Case Study of Delhi, 1714  
Critical Factors Affecting Schedule Performance: Evidence from Indian Construction Projects, 375
- Developing Integrated Schedules for Urban Rail and Feeder Bus Operation, 1788  
Life of Maithon Reservoir on Ground of Sedimentation: Case Study in India, 1019  
Operational Integration of Suburban Railway and Public Buses — Case Study of Mumbai, 1718  
Particulate Matter from Stone Crushing Industry: Size Distribution and Health Effects, 628  
Performance Evaluation of Reference Evapotranspiration Equations across a Range of Indian Climates, 1190  
Runoff and Sediment Yield Modeling using Artificial Neural Networks: Upper Siwane River, India, 1078  
Simplified Kernel Method for Flow to Large Diameter Wells, 1173  
Structural Evaluation of Cement Concrete Roads in Mumbai City, 1379
- Industrial plants**  
Behavior of an Air Curtain Subjected to Transversal Pressure Variations, 611  
Fuzzy Geographic Information Systems for Phytoremediation Plant Selection, 596  
Material Flow-Based Facility Layout Analysis of a Manufactured Housing Production Plant, 103  
Predicting the Shear Strength of Mechanical Clinching in Cold-Formed Steel Structures, 1308  
Seismic Performance of Industrial Facilities Affected by the 1999 Turkey Earthquake, 1367
- Industrial wastes**  
Dam Break Wave of Thixotropic Fluid, 960  
Electrochemical Oxidation and Ozonation for Textile Wastewater Reuse, 619  
Enhancing Bioremediation with Enzymatic Processes: A Review, 1947  
Evaluation of Water Reuse Technologies for the Textile Industry, 618  
Fenton and Electro-Fenton Methods for Oxidation of H-Acid and Reactive Black 5, 624  
Fuzzy Geographic Information Systems for Phytoremediation Plant Selection, 596  
Industrial Water Use Kuznets Curve: Evidence from Industrialized Countries and Implications for Developing Countries, 1819  
Selective Removal of Heavy Metals from Industrial Wastewater using Maghemite Nanoparticle: Performance and Mechanisms, 679  
Treatment of High-Strength Pharmaceutical Wastewater and Removal of Antibiotics in Anaerobic and Aerobic Biological Treatment Processes, 597  
Treatment of Polishing Wastewater from Semiconductor Manufacturer by Dispersed Air Flotation, 588
- Industrial water**  
Operational Optimization and Mass Balances in a Two-Stage MBR Treating High Strength Pet Food Wastewater, 691  
Selective Removal of Heavy Metals from Industrial Wastewater using Maghemite Nanoparticle: Performance and Mechanisms, 679
- Inelastic action**  
Identification and Interpretation of Microplane Material Laws, 465  
New Approach for Seismic Nonlinear Analysis of Inelastic Framed Structures, 535

## Inelastic action

- Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. I: Theory, 1515  
Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. II: Applications, 1516  
Seismic Reliability of Low-Rise Nonsymmetric Wood-frame Buildings, 1513

## Infiltration

- Behavior of Unsaturated Layered Soil Columns during Infiltration, 1105  
Case History of Geosynthetic Reinforced Segmental Retaining Wall Failure, 921  
Case Study: Design and Operation of Sustainable Urban Infiltration Ponds Treating Storm Runoff, 1775  
Efficient Solution of the Coupled One-Dimensional Surface — Two-Dimensional Subsurface Flow during Furrow Irrigation Advance, 1206  
Estimating Infiltration in the Upper Split Wash Watershed, Yucca Mountain, NV, 1083  
Estimating Slope Stability Reduction due to Rain Infiltration Mounding, 890  
Expose to Condensation Moisture of Sheathing in Retrofitted Leaky Wall Assemblies, 90  
Grass Swale-Perforated Pipe Systems for Stormwater Management, 1170  
Modified Kostiakov Infiltration Function: Accounting for Initial and Boundary Conditions, 1230  
Prioritizing Sanitary Sewers for Rehabilitation using Least-Cost Classifiers, 1154  
Time-Step Dependency of Infiltration Errors in the HSPF Model, 1102

## Inflatable structures

- Continuum Modeling of an Innovative Space-Based Radar Antenna Truss, 79  
Study of a Honeycomb-Type Rigidified Inflatable Structure for Housing, 1603

## Inflow

- Prioritizing Sanitary Sewers for Rehabilitation using Least-Cost Classifiers, 1154  
Stochastic Optimization of the Highland Lakes System in Texas, 1807  
Three-Dimensional Modeling for Estimation of Hydraulic Retention Time in a Reservoir, 710

## Information management

- 3D Scan Information Management System for Construction Management, 301  
Application of Dependency Structure Matrix for Activity Sequencing in Concurrent Engineering Projects, 336  
Construction IT Decision Making Using Multiattribute Utility Theory for Use in a Laboratory Information Management System, 414  
Construction Management of a Small-Scale Accelerated Pavement Testing Facility, 1388  
Development of an Industry Foundation Classes Assembly Viewer, 257  
Disaster Recovery System Model with E-Government Case Study, 1937  
Evaluating the Effectiveness of State Department of Transportation Investment Decisions: Linking Performance Measures to Resource Allocation, 1159  
Firm Performance and Information Technology Utilization in the Construction Industry, 338  
GeoCongress 2006: Geotechnical Engineering in the Information Technology Age, 2068

## 2006 ASCE TRANSACTIONS

- Multimodal Image Retrieval from Construction Databases and Model-Based Systems, 365

Organizational Distortions and Failures: A Method to Expose Them, 1408

Prototype System for Knowledge Problem Definition, 340

Success/Failure Factors and Performance Measures of Web-Based Construction Project Management Systems: Professionals' Viewpoint, 295

System Model for Analyzing Design Productivity, 1240

Using Disturbance Data to Assess Vulnerability of Electric Power Delivery Systems, 1161

## Information retrieval

Multimodal Image Retrieval from Construction Databases and Model-Based Systems, 365

Ontology-Centered Knowledge Management using Information Retrieval Techniques, 270

## Information systems

Construction Scheduling and Progress Control using Geographical Information Systems, 285

Evaluation Model for Information Systems Benefits in Construction Management Processes, 398

Framework to Support the Representations of Semantic Mappings for a Hybrid Integration Strategy, 268

Robust Mobile Ad Hoc Space for Collaboration to Support Disaster Relief Efforts Involving Critical Physical Infrastructure, 247

Success/Failure Factors and Performance Measures of Web-Based Construction Project Management Systems: Professionals' Viewpoint, 295

## Information technology (IT)

Application of Web Services for Structural Engineering Systems, 260

Construction IT Decision Making Using Multiattribute Utility Theory for Use in a Laboratory Information Management System, 414

Creating a New School of Computer Science and Engineering in Kansas City, 1912

Evaluation of Legal Risks for E-Commerce in Construction, 1438

Experimental Assessment of Wireless Construction Technologies, 388

Exploiting Knowledge Management: The Engineering and Construction Perspective, 1237

Improving Value Generation in the Design Process of Industrial Projects using CAVT, 1243

MACROS: Multiobjective Automated Construction Resource Optimization System, 1252

Modeling and Analyzing the Impact of Technology on Data Capture and Transfer Processes at Construction Sites: A Case Study, 401

Multimodal Image Retrieval from Construction Databases and Model-Based Systems, 365

Parallel Genetic Algorithms for Optimizing Resource Utilization in Large-Scale Construction Projects, 337

Potential of Augmented Reality as an Assistant Viewer for Computer-Aided Drawing, 280

Prototype System for Knowledge Problem Definition, 340

Success/Failure Factors and Performance Measures of Web-Based Construction Project Management Systems: Professionals' Viewpoint, 295

Systems Analysis of Technical Advancement in Earthmoving Equipment, 385

## SUBJECT INDEX

- Using Our Best Judgment, 2030  
Web-Services Environment for Collaborative Management of Product Life-Cycle Costs, 318
- Infrastructure**  
17th Analysis and Computation Specialty Conference, 2044  
Adaptive Optimization and Systematic Probing of Infrastructure System Maintenance Policies under Model Uncertainty, 1156  
Applications of Advanced Technology in Transportation, 2049  
CAPM-Based Valuation of Financial Government Supports to Infeasible and Risky Private Infrastructure Projects, 312  
Cold Regions Engineering 2006 — Current Practices in Cold Regions Engineering, 2056  
Computerized System for Efficient Delivery of Infrastructure Maintenance/Repair Programs, 290  
Condition Rating Model for Underground Infrastructure Sustainable Water Mains, 1376  
Contingency Planning in Project Selection using Multi-objective Optimization and Chance Constraints, 1148  
Cost-Effectiveness of Railway Infrastructure Renewal Maintenance, 1729  
Decision Methodology for Allocating Funds across Transportation Infrastructure Assets, 1137  
Delay between Sensing and Response in Water Contamination Events, 1145  
Downstream Economic Benefits of Conservation Development, 1804  
Factor Analysis of Public Clients' Best-Value Objective in Public — Privately Partnered Infrastructure Projects, 383  
Hedgehog and Fox Strategies for Reducing Risks in Infrastructure Systems, 1935  
Impacts of the 2001 World Trade Center Attack on New York City Critical Infrastructures, 1163  
Infrastructure Development and Expansion under Uncertainty: A Risk-Preference-Based Lattice Approach, 350  
Infrastructure Planning Handbook -- Planning, Engineering, and Economics, 2075  
Knowledge Discovery in a Facility Condition Assessment Database using Text Clustering, 1142  
Lessons from Katrina, 2009  
Methodology for Locating Monitoring Stations to Detect Contamination in Potable Water Distribution Systems, 1162  
Modeling Cost Escalation in Large Infrastructure Projects, 373  
Operational Response Model for Physically Attacked Water Networks using NSGA-II, 283  
Pipelines 2006 — Service to the Owner, 2080  
Prioritizing Sanitary Sewers for Rehabilitation using Least-Cost Classifiers, 1154  
Public Clients' Best Value Perspectives of Public Private Partnerships in Infrastructure Development, 298  
*RiverSpill*: A National Application for Drinking Water Protection, 970  
Simplified Numerical Method to Evaluate the Mechanical Strength of Cast Iron Water Pipes, 1143  
Statistical Modeling of User Perceptions of Infrastructure Condition: Application to the Case of Highway Roughness, 1677
- Inspection**  
Terrorism Risks and Blast Damage to Built Infrastructure, 1933  
Using Advanced Inspection Technologies to Support Investments in Maintenance and Repair of Transportation Infrastructure Facilities, 1669  
Utilization of Trenchless Construction Methods in Mainland China to Sustain Urban Infrastructure, 1984  
Wavelet-Based Vibration Sensor Data Compression Technique for Civil Infrastructure Condition Monitoring, 275
- Injection**  
Diagnostic Curve for Estimating Soil Dispersion and Instantaneously Injected Mass, 1194
- Injection wells**  
Field Study to Investigate WIDE Technology for TCE Extraction, 880
- Injuries**  
Analysis of Construction Worker Injuries That Do Not Result in Lost Time, 320
- Inlets, waterways**  
Blast-Resistant Glazing Design, 97  
Comparative Injury and Fatality Risk Analysis of Building Trades, 342  
Physical Risk Factors and Controls for Musculoskeletal Disorders in Construction Trades, 393
- Inlets, waterways**  
Design of Street Curb Opening Inlets using a Decay-Based Clogging Factor, 1057
- Innovation**  
Foundation Analysis and Design -- Innovative Methods, 2067  
Innovations in Earthmoving Equipment: New Forms and Their Evolution, 386  
Stimulating Construction Innovation in Singapore through the National System of Innovation, 394  
Systems Analysis of Technical Advancement in Earthmoving Equipment, 385
- Inorganic chemicals**  
Bioremediation of Hazardous Wastes — A Review, 1946  
Comparison of Methods for Determining Specific Surface Area of Soils, 865  
Precipitative Removal of As, Ba, B, Cr, Sr, and V using Sodium Carbonate, 653  
Rheological Characterization of Asphalt Emulsions Residues, 1304  
Transformation of DDT and its Metabolites by Various Abiotic Methods, 662  
Use of Inorganic Polymer to Improve the Fire Response of Balsa Sandwich Structures, 1303  
Zero-Valent Iron Reactive Materials for Hazardous Waste and Inorganics Removal, 2097
- Inspection**  
Construction, Inspection, and Maintenance of FRP Deck Panels, 245  
Fuzzy Logic Based Condition Rating of Existing Reinforced Concrete Bridges, 1392  
In-Service Evaluation of Cable-Stayed Bridges, Overview of Available Methods, and Findings, 175

## Inspection

- Optimal Inspection Scheduling of Steel Bridges using Nondestructive Testing Techniques, 134
- Performance Prediction of Bridge Deck Systems using Markov Chains, 1378
- Using Advanced Inspection Technologies to Support Investments in Maintenance and Repair of Transportation Infrastructure Facilities, 1669

## Installation

- Standard Guidelines for the Design of Urban Stormwater Systems ASCE/EWRI 45-05; Standard Guidelines for Installation of Urban Stormwater Systems ASCE/EWRI 46-05; Standard Guidelines for the Operation and Maintenance of Urban Stormwater Systems ASCE/EWRI 47-05, 2089

## Instream flow

- Value of Instream Recreation in the Sonoran Desert, 1806
- Valuing Fisheries and Wetlands using Integrated Economic-Hydrologic Modeling — Mekong River Basin, 1850

## Instrumentation

- Adjusting Nodal Demands in SCADA Constrained Real-Time Water Distribution Network Models, 942
- Difference between In Situ Flexible Pavement Measured and Calculated Stresses and Strains, 1725
- Effect of Slab-Base Interaction on Measured Concrete Pavement Responses, 1707
- Identifying Effective and Ineffective Retrofits for Distortion Fatigue Cracking in Steel Bridges Using Field Instrumentation, 178
- Measurement of Truck Axle Weights by Instrumenting Longitudinal Ribs of Orthotropic Bridge, 155
- Performance of a Cantilever Retaining Wall, 875
- System for In-Service Strain Monitoring of Ordinary Bridges, 170

## Insulation

- Design Errors: Inefficiency or Carelessness of Designer?, 1383
- Multifunctional Hybrid GFRP/Steel Joint for Concrete Slab Structures, 244
- Structural Insulated Panels: Impact on the Residential Construction Process, 366

## Insurance

- Catastrophe Risk Models for Wildfires in the Wildland — Urban Interface: What Insurers Need, 1938
- Real Estate Market Response to Coastal Flood Hazards, 1936

## Intakes

- Case Study: Sediment Control at Water Intake for Large Thermal-Power Station on a Small River, 975
- Frazil Ice Blockage of Water Intakes in the Great Lakes, 1011
- RiverSpill: A National Application for Drinking Water Protection, 970
- Validation of a Large-Eddy Simulation Model to Simulate Flow in Pump Intakes of Realistic Geometry, 1062

## Integrated systems

- Building Integration Solutions, 2053
- Developing Integrated Schedules for Urban Rail and Feeder Bus Operation, 1788
- Equilibrium Approach to Integrating Regional Surface Water Treatment and Limited Groundwater Pumping Capacity, 1847

## 2006 ASCE TRANSACTIONS

- Implementing a B2B e-Work System to the Approval Process of Rebar Design and Estimation, 248

- Integrated Economic, Hydrologic, and Institutional Analysis of Policy Responses to Mitigate Drought Impacts in Rio Grande Basin, 1851

## Intelligent structures

- Integrated Optimization of Control System for Smart Cylindrical Shells using Modified GA, 66

## Intelligent transportation systems

- Algorithm Fusion for Detecting Incidents on Singapore's Central Expressway, 1696
- Enhancing Short-Term Traffic Forecasting with Traffic Condition Information, 1712
- Reliable Real-Time Framework for Short-Term Freeway Travel Time Prediction, 1765
- Short-Term Freeway Traffic Flow Prediction: Bayesian Combined Neural Network Approach, 1675
- System-Wide Data Quality Control of Inductance Loop Data using Nonlinear Optimization, 263

## Interactions

- Automated Estimation of Average Stopped Delay at Signalized Intersections using Digitized Still-Image Analysis of Actual Traffic Flow, 258

- Observed Performance of Long Steel H-Piles Jacked into Sandy Soils, 779

## Interchanges

- Automated Signal Operations of Congested Diamond Interchanges, 1750
- Development of an Optimization Methodology for Adaptive Traffic Sign Control at Diamond Interchanges, 1732

## Interface shear

- Postpeak Strength of Interfaces in a Stress-Dilatancy Framework, 914

## Interfaces

- Analytical Investigation of Friction Sleeve Length Effect on Stratigraphic Interpretation, 13
- Continuous Interface Elements Subject to Large Shear Deformations, 21
- Determination of Nonlinear Softening Behavior at FRP Composite/Concrete Interface, 484
- DSR Model for Soil and Interface Including Liquefaction and Prediction of Centrifuge Test, 799
- Effect of Slab-Base Interaction on Measured Concrete Pavement Responses, 1707
- Energy-Based Modeling Approach for Debonding of FRP Plate from Concrete Substrate, 492
- Fracture Analysis of Shear Deformable Bi-Material Interface, 466
- Fracture Mechanics Based Model for Joints under Cyclic Loading, 556
- Fracture Mechanics Method for Mode-I Interface Evaluation of FRP Bonded to Concrete Substrates, 1346
- Full Two-Dimensional Model for Rolling Resistance: Hard Cylinder on Viscoelastic Foundation of Finite Thickness, 565
- "Giant Superelasticity Effect" in NiTi Superelastic Materials and Its Applications, 1360
- Identifying a Design Management Package to Support Concurrent Design in Building Wafer Fabrication Facilities, 348
- Peel and Shear Fracture Characterization of Debonding in FRP Plated Concrete Affected by Moisture, 192
- Properties of Asphalt Concrete Layer Interfaces, 1312

## SUBJECT INDEX

- Soil — Nail Pullout Interaction in Loose Fill Materials, 36
- Three-Dimensional Free Vibration Analysis of Multi-phase Piezocomposite Structures, 524
- Internal forces**
- Suction Stress Characteristic Curve for Unsaturated Soil, 791
- Internal waves**
- Cross-Shore Internal Waves in Zanpa Coastal Region of Okinawa Island, 1858
- Effect of Long Internal Waves on the Quality of Water Withdrawn from a Stratified Reservoir, 1047
- Transformation, Attenuation, Setup, and Undertow of Internal Waves on a Gentle Slope, 1901
- International factors**
- Case-Based Reasoning Model for International Market Selection, 381
- Civil Engineering Crisis, 1907
- Decline of the Engineering Class: Effects of Global Outsourcing of Engineering Services, 1910
- Determinants of International Architectural, Engineering, and Construction Firms' Project Success in China, 309
- Innovative Final-Year Undergraduate Design Project Course using an International Project, 1432
- MAUT-Based Dispute Resolution Selection Model Prototype for International Construction Projects, 332
- On Globalization, 1908
- Vaporizing the Gathering Storm, 2005
- Internet**
- Application of Web Services for Structural Engineering Systems, 260
- Construction Business Automation System, 296
- Customizing Visualization in Three-Dimensional Urban GIS via Web-Based Interaction, 1782
- Evaluation of Legal Risks for E-Commerce in Construction, 1438
- Experimental Assessment of Wireless Construction Technologies, 388
- Implementing a B2B e-Work System to the Approval Process of Rebar Design and Estimation, 248
- Internet-Enabled Remote Observation and Control of a Shake Table Experiment, 271
- Moving a Reinforced-Concrete Building: Case Study, 299
- Success/Failure Factors and Performance Measures of Web-Based Construction Project Management Systems: Professionals' Viewpoint, 295
- Use of a WBS Matrix to Improve Interface Management in Projects, 294
- Web-Enabled System Dynamics Model for Error and Change Management on Concurrent Design and Construction Projects, 273
- Web-Services Environment for Collaborative Management of Product Life-Cycle Costs, 318
- Intersections**
- Geometric Models to Calculate Left-Turn Sight Distance for Signalized Intersections on Horizontal Curves, 1738
- Influence of Pedestrians' Entry Process on Pedestrian Delays at Signal-Controlled Crosswalks, 1757
- Iron**
- Modeling Crash Types: New Insights into the Effects of Covariates on Crashes at Rural Intersections, 1692
- Probabilistic Model for Signalized Intersection Capacity with a Short Right-Turn Lane, 1685
- Upstream Signalized Crossover Intersection: An Unconventional Intersection Scheme, 1763
- Interstate highways**
- Analytical Procedures for Estimating Capacity of Freeway Weaving, Merge, and Diverge Sections, 1731
- Inventive Maintenance, 2017
- Moving On, 2018
- Paving America From Coast to Coast, 2016
- Using GPS to Measure the Impact of Construction Activities on Rural Interstates, 339
- Investments**
- CAPM-Based Valuation of Financial Government Supports to Infeasible and Risky Private Infrastructure Projects, 312
- CommunityViz-Based Prototype Model for Assessing Development Impacts in a Naturalized Floodplain — EmiquonViz, 1795
- Optimization of Investments in Natural Gas Distribution Networks, 425
- Ion exchange**
- Feasibility of Using Natural Zeolites to Remove Sodium from Coal Bed Methane-Produced Water, 771
- Physio-Chemical Changes in Clay Caused by Ion Migration from Lime Piles, 1281
- Iran**
- Structural Analysis of the Wooden Structure of the Historical Building of Ali Qapu, 1616
- Iron**
- Arsenic Removal from Water by Moving Bed Active Filtration, 583
- Effect of Chloride Ions on the Dechlorination of Hexachlorobenzene in the Presence of Zero-Valent Iron, 1965
- Effect of Metallic Iron Concentration on End-Product Distribution during Metallic Iron-Assisted Autotrophic Denitrification, 712
- Effects of Surface-Bound Fe<sup>2+</sup> on Nitrate Reduction and Transformation of Iron Oxide(s) in Zero-Valent Iron Systems at Near-Neutral pH, 658
- Factors Influencing Arsenite Removal by Zero-Valent Iron, 749
- High-Density Polyethylene Membrane Containing Fe<sup>0</sup> as a Contaminant Barrier, 690
- Iron Oxide Enhanced Chlorine Decay and Disinfection By-Product Formation, 767
- Iron-Mediated Aeration: Evaluation of Energy-Assisted Enhancement for In Situ Subsurface Remediation, 683
- Laboratory-Scale Evaluation of Cr(VI) Removal from Clay by Electrokinetics Incorporated with Fe(O) Barrier, 1959
- Minimizing Mass Transfer Effects in Granular Iron Bath Tests Using GEM Reactors, 776
- Simulation of Lead Ions Adsorption onto the Iron-Coated Medium: Dependent on Temperature and pH, 1942
- Time-Dependent Behavior of Posttensioned Wood Howe Bridges, 1480

## Irrigation

### Irrigation

Achieving Water Use Efficiency in Irrigation Districts, 1846

Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Theory, 1186

Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Simulation Results, 1187

Calibration of Electromagnetic Induction for Regional Assessment of Soil Water Salinity in an Irrigated Valley, 1213

Development of GIS-Based Model to Estimate Relative Reductions in Crop Yield due to Salinity and Waterlogging, 1227

Effect of Controlled Drainage and Vegetative Buffers on Drainage Water Quality from Wastewater Irrigated Fields, 1182

Effect of Forecast-Based Pricing on Irrigated Agriculture: A Simulation, 1843

Estimation of Evapotranspiration of Different-Sized Navel-Orange Tree Orchards using Energy Balance, 1164

Evaluating Regional Solutions to Salinization and Waterlogging in an Irrigated River Valley, 1166

Integrad Management of Irrigation and Urban Storm-Water Infiltration, 1839

Investigation of the Influence of Sprinkler Fins and Dissolved Air on Jet Flow, 1168

Irrigation Potential of the TRASVASE System (Santa Elena Peninsula, Guayas, Ecuador), 1215

Irrigation Scheduling with Travel Times, 1188

Managing Irrigation for Better River Ecosystems — A Case Study of the Middle Rio Grande, 1229

Measurement of Light Interception by Navel Orange Orchard Canopies: Case Study of Lindsay, California, 1165

Optimal Irrigation Planning under Water Scarcity, 1189

Optimal Reservoir Operation for Irrigation of Multiple Crops using Genetic Algorithms, 1178

Optimal Reservoir Operations for Irrigation using a Three Spatial Scales Approach, 1179

Performance-Based Optimization of Land and Water Resources within Irrigation Schemes. II: Application, 1202

Set Sprinkler Irrigation and Its Cost, 1214

Stochastic Dynamic Programming with Risk Consideration for Transbasin Diversion System, 1812

Tuning of Robust Distant Downstream PI Controllers for an Irrigation Canal Pool. I: Theory, 1204

Tuning of Robust Distant Downstream PI Controllers for an Irrigation Canal Pool. II: Implementation Issues, 1205

### Irrigation districts

Model for the Simulation of Water Flows in Irrigation Districts. I: Description, 1199

Model for the Simulation of Water Flows in Irrigation Districts. II: Application, 1200

### Irrigation practices

Modeling Water Movement and Flux from Membrane Permeation Systems for Wastewater Microirrigation, 714

Regional Salinity Modeling for Conjunctive Water Use Planning in Kheri Command, 1207

### Irrigation scheduling

Optimal Irrigation Planning under Water Scarcity, 1189

## 2006 ASCE TRANSACTIONS

Productivity and Equity of Different Irrigation Schedules under Limited Water Supply, 1203

Regional Salinity Modeling for Conjunctive Water Use Planning in Kheri Command, 1207

### Irrigation systems

Economic Analysis of an Irrigation System for Liquid Manure Application, 1208

Performance-Based Optimization of Land and Water Resources within Irrigation Schemes. I: Method, 1201

### Irrigation water

Regional Salinity Modeling for Conjunctive Water Use Planning in Kheri Command, 1207

### Islands

Limitations of Depth-Averaged Modeling for Shallow Lakes, 1004

### Isolation

Effects of Pier and Deck Flexibility on the Seismic Response of Isolated Bridges, 115

Property Modification Factors for Seismically Isolated Bridges, 140

### Isotherms

Determination and Correlation of Binary Gas Adsorption Equilibria of VOCs, 616

### Isotopes

Isotopic Fractionation of Tetrachloroethene Undergoing Biodegradation Supported by Endogenous Decay, 681

Use of Boron as a Tracer for Recycled Water in Brackish Aquifers, 696

### Isotropic materials

Diagnostic Curve for Estimating Soil Dispersion and Instantaneously Injected Mass, 1194

### Isotropy

Failure and Dilatancy Properties of Sand at Relatively Low Stresses, 582

### Israel

Water Reuse/Recycling and Reclamation in Semiarid Zones: The Israeli Case of Salination and "Hard" Surfactants Pollution of Aquifers', 675

### Italy

EOF Analysis of Complex Response of Venice Mobile Gates, 1872

Experimental In-Plane Behavior of Tuff Masonry Strengthened with Cementitious Matrix — Grid Composites, 210

Flood Frequency Analysis for Sicily, Italy, 1082

Liquefaction Resistance of Undisturbed and Reconstituted Samples of a Natural Coarse Sand from Undrained Cyclic Triaxial Tests, 797

Renovation of the 17th-Century Ponte Lungo Bridge in Chioggia, Italy, 105

Structural Monitoring and Integrity Assessment of Medieval Towers, 1605

### Jacking

Termination Criteria for Jacked Pile Construction and Load Transfer in Weathered Soils, 854

### Japan

Cross-Shore Internal Waves in Zanpa Coastal Region of Okinawa Island, 1858

## SUBJECT INDEX

- Observation and Simulation of Floodwater Intrusion and Sedimentation in the Shichikashuku Reservoir, 1020
- Reaction Response of a Rigid Body under Seismic Excitation, 472
- Route Selection for a New Transportation System in Hillside Urban Areas: A Case Study in Nagasaki, Japan, 1781
- Soil-Pile Response to Blast-Induced Lateral Spreading. I: Field Test, 793
- Jets**
- Coupling of U-Tube and Shear Layer Oscillations in an Interconnected Flow Compartment, 511
- Multiple Tandem Jets in Cross-Flow, 1027
- Joints**
- Behavior of Beam-Column Joints made of Sustainable Concrete under Cyclic Loading, 1336
- Design Equation for Offshore Overlap Tubular K-Joints under In-Plane Bending, 1545
- Dynamic Anomalies in a Modular Bridge Expansion Joint, 157
- Effect of Slab-Base Interaction on Measured Concrete Pavement Responses, 1707
- Finite-Element Modeling of Timber Joints with Punched Metal Plate Fasteners, 1479
- Forces on Plunge Pool Slabs: Influence of Joints Location and Width, 936
- Fracture Mechanics Based Model for Joints under Cyclic Loading, 556
- Identification of the Location and Level of Damage in Multiple-Bolted-Joint Structures by PZT Actuator-Sensors, 1469
- The Most Degrading Postbuckling Mode of Pin-Jointed Structures, 513
- Seismic-Resistant Weld-Free Steel Frame Buildings with Mechanical Joints and Hysteretic Dampers, 1525
- Selection of Carbon-Fiber-Reinforced Polymer Systems for Steelwork Upgrading, 1335
- Static Strength of Cracked Square Hollow Section T Joints under Axial Loads. I: Experimental, 1475
- Static Strength of Cracked Square Hollow Section T Joints under Axial Loads. II: Numerical, 1476
- Use of an Infrared Joint Heater to Improve Longitudinal Joint Performance in Hot Mix Asphalt Pavements, 1380
- Kansas**
- Catastrophe-Induced Destruction and Reconstruction, 1924
- Updated Precipitation Frequency Estimates for Kansas City: Comparison with TP-40 and HYDRO-35, 1092
- Kaolin**
- Metakaolin as an Extender in South African Cement, 1332
- Single Hardening Elasto-Plastic Model for Kaolin Clay with Loading-History-Dependent Plastic Potential Function, 17
- Strain Localization in Combined Axial-Torsional Testing on Kaolin Clay, 489
- Kinematic wave theory**
- Analytical Solutions of Nonlinear Kinematic Wave Model, 1126
- ANN and Fuzzy Logic Models for Simulating Event-Based Rainfall-Runoff, 1064
- Kriging
- Kinematic Wave Parameters for Trapezoidal and Rectangular Channels, 1088
- Storm-Water Predictions by Dimensionless Unit Hydrograph, 1210
- Kinematics**
- Development and Verification of an Analytical Solution for Forecasting Nonlinear Kinematic Flood Waves, 1107
- General Formulation of Two Kinematic Hardening Constitutive Models with a Smooth Elastoplastic Transition, 41
- Kinetics**
- Biodegradation of Tetrachloroethene by Chitin Fermentation Products in a Continuous Flow Column System, 673
- Development of a Response Surface for Prediction of Nitrate Removal in Sulfur-Limestone Autotrophic Denitrification Fixed-Bed Reactors, 721
- Effects of Nutrient Source and Supply on Crude Oil Biodegradation in Continuous-Flow Beach Microcosms, 591
- Electrocoagulation of Silica Nanoparticles in Wafer Polishing Wastewater by a Multichannel Flow Reactor: A Kinetic Study, 772
- Impact of Inherent Factors on the Radiolytic Degradation of Biorefractory Contaminants, 755
- Inactivation Kinetics of the Cyanobacterial Toxin Microcystin-LR by Free Chlorine, 692
- Minimizing Mass Transfer Effects in Granular Iron Batch Tests Using GEM Reactors, 776
- Optimization of an Unstructured First-Order Kinetics Model of Cyclically Operated Bioreactors, 649
- Procedure to Quantify Biofilm Activity on Carriers used in Wastewater Treatment Systems, 745
- The Role of Biofoulementation on Suspended Solids and Particulate COD Removal in the Trickling Filter Process, 655
- Knowledge-based systems**
- Case-Based Reasoning Model for International Market Selection, 381
- Exploiting Knowledge Management: The Engineering and Construction Perspective, 1237
- The Limitations of Planning: The Importance of Learning, 382
- Ontology-Centered Knowledge Management using Information Retrieval Techniques, 270
- Prototype System for Knowledge Problem Definition, 340
- Safety Hazard Identification on Construction Projects, 308
- Web-Services Environment for Collaborative Management of Product Life-Cycle Costs, 318
- Korea**
- Characteristics of Contractor's Liabilities for Defects and Defective Work in Korean Public Projects, 1422
- Combining Rainfall-Runoff Model Outputs for Improving Ensemble Streamflow Prediction, 1130
- Transportation System Sustainability Issues in High-, Middle-, and Low-Income Economies: Case Studies from Georgia (U.S.), South Korea, Colombia, and Ghana, 1793
- Kriging**
- GIS Visualization and Analysis of River Operations Impacts on Endangered Species Habitat, 1816

## Labor

### Labor

- Effects of Schedule Pressure on Construction Performance, 306  
Fundamental Principles for Avoiding Congested Work Areas — A Case Study, 1989

### Laboratories

- Through it All, 2004

### Laboratory tests

- Assessing Permanent Deformation Resistance of High Modulus Asphalt Mixtures, 1704  
Behavior of Unsaturated Layered Soil Columns during Infiltration, 1105  
Biologically Mediated Reductive Transformation of Ordnance-Related Compounds by Mixed Aquifer Culture using Acetate as the Sole Carbon Source: Laboratory Treatability Studies for Field Demonstration, 1948  
Compression Behavior of Nonslender Cylindrical Steel Members with Small and Large-Scale Geometric Imperfections, 1560  
Design of Compacted Lateritic Soil Liners and Covers, 798  
Development of a Field Design for In Situ Gaseous Treatment of Sediment Based on Laboratory Column Test Data, 769  
Development of a University Laboratory Chemical Inventory and Exchange Program, 1945  
Drained and Undrained Strength Interpretation for Low-Plasticity Silts, 802  
Empirical Punching Shear Failure Theory for Oriented Strand Boards: Preliminary Study, 1487  
Evaluation of Dispersion Coefficients in Meandering Channels from Transient Tracer Tests, 1033  
Exposure to Condensation Moisture of Sheathing in Retrofitted Leaky Wall Assemblies, 90  
Fatigue and Healing of Asphalt Mixtures: Discriminate Analysis of Fatigue Curves, 1680  
Flow Patterns and Energy Dissipation over Various Stepped Chutes, 1172  
Force Identification Based on Sensitivity in Time Domain, 544  
Frazil Ice Blockage of Water Intakes in the Great Lakes, 1011  
Granular Material Silos under Dynamic Excitation: Numerical Simulation and Experimental Validation, 1594  
Hydrodynamic Characteristics of Pile-Supported Vertical Wall Breakwaters, 1863  
Identification of Poroelastic Constants of "Tight" Rocks from Laboratory Tests, 33  
Influence of Compactive Efforts on Lime-Slag Treated Tropical Black Clay, 1280  
Intelligent Utility Locating Tool for Excavators, 379  
Iron-Mediated Aeration: Evaluation of Energy-Assisted Enhancement for In Situ Subsurface Remediation, 683  
Laboratory Evaluation of Crushed Glass-Dredged Material Blends, 830  
Laboratory Evaluation of Smear Zone and Correlation between Permeability and Moisture Content, 867  
Laboratory Experiments on Frazil-Size Characteristics in a Counterrotating Flume, 941  
Laboratory Observation of Solitary Wave Propagating over a Submerged Rectangular Dike, 488

## 2006 ASCE TRANSACTIONS

Laboratory Studies of Two Common Saprolitic Soils in Hong Kong, 864

Laboratory Study of Liquefaction due to Wave-Seabed Interaction, 856

Minimizing Mass Transfer Effects in Granular Iron Batch Tests Using GEM Reactors, 776

Parallel Walls as an Abutment Scour Countermeasure, 982

Parameter Optimization and Sensitivity Analysis for Disturbed State Constitutive Model, 19

Physical Analog of the Linear Reservoir, 1089

Soil — Nail Pullout Interaction in Loose Fill Materials, 36

Soil Stabilization using Basic Oxygen Steel Slag Fines, 1285

Spatial and Temporal Characteristics of Transient Extreme Wave Profiles on Depth-Varying Currents, 541

Threshold Shear Strain for Cyclic Pore-Water Pressure in Cohesive Soils, 900

Variation of Flow Pattern with Sinuosity in Sine-Generated Meandering Streams, 1031

Vertical Drain Consolidation with Parabolic Distribution of Permeability in Smear Zone, 866

Viscoelastic Modeling and Field Validation of Flexible Pavements, 452

Visualization of Crushing Evolution in Granular Materials under Compression using DEM, 32

### Lagoons

Ecofriendly Concrete with High Volume of Lagoon Ash, 1310

### Lakes

Application of Support Vector Machine in Lake Water Level Prediction, 1091

Artificial Neural Network Models of Daily Pan Evaporation, 1077

Development and Application of a Phosphorus Model for a Shallow Oxbow Lake, 753

Modeling of Lake Ice Characteristics in North America using Climate, Geography, and Lake Bathymetry, 187

New Life for Onondaga Lake, 2014

Stochastic Optimization of the Highland Lakes System in Texas, 1807

Watershed Environmental Hydrology Model: Environmental Module and Its Application to a California Watershed, 1099

### Laminar flow

Behavior of an Air Curtain Subjected to Transversal Pressure Variations, 611

Electrocoagulation of Silica Nanoparticles in Wafer Polishing Wastewater by a Multichannel Flow Reactor: A Kinetic Study, 772

### Laminates

Bond Behavior of Near-Surface Mounted CFRP Laminate Strips under Monotonic and Cyclic Loading, 218

Elastic Buckling of Laminated Conical Shells Using a Hierarchical High-Fidelity Analysis Procedure, 575

Elastic Constants Identification of Composite Materials using Single Angle-Ply Laminate, 560

Electroelastic Response of a Laminated Composite Plate with Piezoelectric Sensors and Actuators, 526

## SUBJECT INDEX

## Lattices

- Flexural Fatigue Behavior of Reinforced Concrete Beams Strengthened with FRP Fabric and Precured Laminate Systems, 232
- Functionally Graded Stitched Laminates: Illustration on the Example of a Double Cantilever Beam, 78
- Membrane-Based Forms for Innovative FRP Bridge Systems through Structural Optimization, 234
- Nine-Node Resultant-Stress Shell Element for Free Vibration and Large Deflection of Composite Laminates, 69
- Nonlinear Response of Laminated Cylindrical Shell Panels Subjected to Thermomechanical Loads, 548
- System Identification of Partially Restrained Composite Plates using Measured Natural Frequencies, 521
- Thermomechanical Postbuckling Analysis of Cross-Ply Laminated Cylindrical Shell Panels, 448
- Land management**
- The Place of Fire, 1932
- Land reclamation**
- Designed for Dry Feet: Flood Protection and Land Reclamation in the Netherlands, 2059
- Liquefaction, Cyclic Mobility, and Failure of Silt, 845
- Land usage**
- Evaluation of the Trans-Texas Corridor Proposal: Application and Enhancements of the Random-Utility-Based Multiregional Input — Output Model, 1720
- Market Disequilibrium and Urban Land Shortages: Analysis of Policy and Patterns in Hong Kong, 1780
- Satellite Monitoring of Urban Spatial Growth in the Amman Area, Jordan, 1796
- Urban Runoff Quality Characterization and Load Estimation in Saskatoon, Canada, 750
- Landfills**
- Characterization of Methane Flux and Oxidation at a Solid Waste Landfill, 607
- Design Considerations for Lysimeters Used to Evaluate Alternative Earthen Final Covers, 919
- Effect of Gas on Pore Pressures in Wet Landfills, 829
- Estimate of Landfill Settlements due to Mechanical and Decompositional Processes, 837
- Estimating the Hydraulic Conductivity of Landfilled Municipal Solid Waste using the Borehole Permeameter Test, 671
- Field Evaluation of a Leachate Collection System Constructed with Scrap Tires, 869
- Field Performance of a Compacted Clay Landfill Final Cover at a Humid Site, 906
- Installation of Horizontal Wells in Landfilled Waste using Directional Drilling, 859
- Microanalytical Characterizations of Eroded and Slaked Mudstone Proposed as Landfill Liner Material, 1953
- Modeling of Settlement in Saturated and Unsaturated Municipal Landfills, 39
- Optimal Design of a Compacted Soil Liner Containing SOrptive Amendments, 686
- Physical Response of Geomembrane Wrinkles Overlying Compacted Clay, 902
- Seismic Response of a Composite Landfill Cover, 819
- Strategic Decision Analysis for Selection of Landfill Sites, 1652
- Unit Weight of Municipal Solid Waste, 893
- Landscaping**
- Developing Knowledge Landscapes through Project-Based Learning, 1416
- Landslides**
- Movement of Finite Amplitude Sediment Accumulations, 1003
- One-Dimensional Model of Shallow Water Surface Waves Generated by Landslides, 977
- Laplace transform**
- Laplace Boundary Element Model for the Thermoelastic Consolidation of Multilayered Media, 25
- Lasers**
- Use of Fresnel Enantiomorphic Diffraction in Surveying Laser Methods, 1650
- Lateral displacement**
- Lateral Distribution of Mixed Traffic on Two-Lane Roads, 1728
- Liquefaction-Induced Lateral Spreading in Near-Fault Regions during the 1999 Chi-Chi, Taiwan Earthquake, 922
- Seismic Behavior of High-Strength Concrete Columns Confined by Fiber-Reinforced Polymer Tubes, 243
- Lateral loads**
- Analytical Solution for Piles Supporting Combined Lateral Loads, 899
- Cellular Automata Model for Predicting the Failure Pattern of Laterally Loaded Masonry Wall Panels, 276
- Cyclic Lateral Load Behavior of a Pile Cap and Backfill, 883
- Cyclic Lateral Load Response of Bridge Column-Foundation-Soil Systems in Freezing Conditions, 1611
- Data Reduction of Horizontal Load Full-Scale Tests on Bored Concrete Piles and Pile Groups, 847
- Influence of Secondary Elements and Deck Cracking on the Lateral Load Distribution of Steel Girder Bridges, 122
- Influence of Torque on Lateral Capacity of Drilled Shafts in Sands, 820
- Lateral Resistance of Single Pile Located near Geosynthetic Reinforced Slope, 901
- Lateral Response Evaluation of Single Piles Using Inclinometer Data, 923
- Nonconstrained Flagpole Design Formula, 1454
- Numerical Solution for Laterally Loaded Piles in a Two-Layer Soil Profile, 910
- Raked Piles — Virtues and Drawbacks, 852
- Lateral pressure**
- Blast Assessment of Load-Bearing Reinforced Concrete Shear Walls, 1982
- Design of Window Glass for Lateral Pressures, 95
- Passive Earth Pressure Mobilization during Cyclic Loading, 884
- Lateral stress**
- Stress Zones Near Displacement Piers: I. Plastic and Liquified Behavior, 782
- Stress Zones near Displacement Piers: II. Radial Cracking and Wedging, 783
- Lattices**
- Infrastructure Development and Expansion under Uncertainty: A Risk-Preference-Based Lattice Approach, 350

## Lattices

Multiphase/Multidomain Computations using Continuum and Lattice — Boltzmann Methods, 84  
Shape Selection for Lattice Structures, 1608

## Layered soils

Bearing Capacity of Square and Circular Footings on a Finite Layer of Granular Soil Underlain by a Rigid Base, 916  
Behavior of Unsaturated Layered Soil Columns during Infiltration, 1105

Frequency-Dependent Amplification of Unsaturated Surface Soil Layer, 827

Investigation of Foundation Vibrations Resting on a Layered Soil System, 789

Numerical Solution for Laterally Loaded Piles in a Two-Layer Soil Profile, 910

Online Earthquake Response Test for Stratified Layers of Clay and Sand, 834

## Leaching

Field Evaluation of a Leachate Collection System Constructed with Scrap Tires, 869

Leaching of Lime from Fly Ash Stabilized with Lime and Gypsum, 1273

Metallic Characterization of Foundry By-Products per Waste Streams and Leaching Protocols, 665

Metals Removal from Municipal Waste Incinerator Fly Ashes and Reuse of Treated Leachates, 654

TCLP Heavy Metal Leaching of Personal Computer Components, 638

Using UCS as a Surrogate Performance Standard at the NCSU NPL Site, 738

## Lead

Advanced Oxidation for Treatment of Aqueous Extracts from EDTA Extraction of Pb and Zn Contaminated Soil, 740

Evaluating an Electrokinetically Driven Extraction Method for Measuring Heavy Metal Soil Contamination, 641

Removal of Lead from Contaminated Water and Clay Soil using a Biosurfactant, 687

Simulation of Lead Ions Adsorption onto the Iron-Coated Medium: Dependent on Temperature and pH, 1942

## Leadership

Assessment with 360° Evaluations of Leadership Behavior in Construction Project Managers, 1246

Emotional Intelligence and Leadership Behavior in Construction Executives, 1251

Influences Impacting Leadership Development, 1245

Measurement Design Is an Opportunity to Learn, 1917

Summary Report: Leading the Way as Full Diversity Partners — A Senior Executive Workshop on Critical Skills for Courageous Leaders, 1905

Vaporizing the Gathering Storm, 2005

## Leakage

Deflection Protection, 2032

Design Errors: Inefficiency or Carelessness of Designer?, 1383

Exposure to Condensation Moisture of Sheathing in Retrofitted Leaky Wall Assemblies, 90

New Design Procedure for Wind Uplift Resistance of Architectural Metal Roofing Systems, 100

Range of Validity of the Transient Damping Leakage Detection Method, 1025

## 2006 ASCE TRANSACTIONS

Vapor Leak Detection for an Underground Storage Tank System, 703

## Lean construction

Lean Construction: From Theory to Implementation, 1256

## Least squares method

Coordinate Transformation between Two Geodetic Datums of Taiwan by Least-Squares Collocation, 1649

Local Geoid Improvement using GPS and Leveling Data: Case Study, 1655

Overparameterized Least-Squares Adjustment with Linear Models for Geodetic and Surveying Applications, 1659

## Left-turns

Estimation of Uniform Delay of Permitted Left Turns from Exclusive Turn Lanes, 1741

Geometric Models to Calculate Left-Turn Sight Distance for Signalized Intersections on Horizontal Curves, 1738

Upstream Signalized Crossover Intersection: An Unconventional Intersection Scheme, 1763

## Legal factors

Alliancing in Australia — No-Litigation Contracts: A Tautology?, 1414

Contractual Management in PPP Projects: Evaluation of Legal versus Relational Contracting for Service Delivery, 1415

Emerging Legal Risks for Construction Management Professionals, 1914

Evaluation of Legal Risks for E-Commerce in Construction, 1438

Legal Challenge to a Best-Value Procurement System, 1906

Legal Consequences of Damages to Underground Facilities by Horizontal Directional Drilling, 1437

Legal Issues Associated with Emergent Actor Roles in Innovative U.K. Procurement: Prime Contracting Cast Study, 1413

## Legislation

Security of Payment Legislation — Case of a Blunt but Practical and Equitable Instrument, 1427

## Leveling

Compilation of a Map of Recent Vertical Crustal Movements in Eastern Canada using Geographic Information System, 1663

Definition of the Vertical Components from GPS and Precise Leveling Measurements in Hong Kong, 1654

Local Geoid Improvement using GPS and Leveling Data: Case Study, 1655

Long-Range Geoid Testing by GPS-Leveling Data in Turkey, 1643

Precise Height Determination using Leap-Frog Trigonometric Leveling, 1657

Real-Time Determination of Orthometric Heights Accurate to the Centimeter Level using a Single GPS Receiver: Case Study, 1640

## Liability

Characteristics of Contractor's Liabilities for Defects and Defective Work in Korean Public Projects, 1422

## Life cycle cost

Building Integration Solutions, 2053

## SUBJECT INDEX

- Contractual Management in PPP Projects: Evaluation of Legal versus Relational Contracting for Service Delivery, 1415  
Impact of Quality on Building Costs, 1157  
Optimal Seismic Design Considering Risk Attitude, Societal Tolerable Risk Level, and Life Quality Criterion, 1639  
Optimizing Bridge Network Maintenance Management under Uncertainty with Conflicting Criteria: Life-Cycle Maintenance, Failure, and User Costs, 1620  
Web-Services Environment for Collaborative Management of Product Life-Cycle Costs, 318
- Life cycles**  
Example of a Hybrid Life-Cycle Assessment of Construction Processes, 1158  
Latent Building Defects: Causes and Design Strategies to Prevent Them, 1386  
Life-Cycle Assessment of Office Buildings in Europe and the United States, 1138  
Probability-Based Bridge Network Performance Evaluation, 167
- Lifeline systems**  
Hedgehog and Fox Strategies for Reducing Risks in Infrastructure Systems, 1935  
Hurricane Katrina: Performance of Transportation Systems, 2074
- Light, artificial**  
Lighting Requirements for Nighttime Highway Construction, 331
- Light, natural**  
Measurement of Light Interception by Navel Orange Orchard Canopies: Case Study of Lindsay, California, 1165
- Lightweight concrete**  
Lightweight Shotcrete Canoe: Use of Viscosity Modifying Admixture and Acetone as Artificial Paste, 1300  
Strength of Lightweight Glass Aggregate Concrete, 1343
- Lime**  
Assessing the Carbonation Behavior of Cementitious Materials, 1351  
Compaction Delay Effects on Properties of Lime-Treated Soil, 1287  
Influence of Compactive Efforts on Lime-Slag Treated Tropical Black Clay, 1280  
Leaching of Lime from Fly Ash Stabilized with Lime and Gypsum, 1273  
Lime-Soda Softening Process Modifications for Enhanced NOM Removal, 600  
Physio-Chemical Changes in Clay Caused by Ion Migration from Lime Piles, 1281  
Small-Strain Shear Moduli of Chemically Stabilized Sulfate-Bearing Cohesive Soils, 808  
Stabilization of Arsenic-Bearing Sludges using Lime, 1276  
Stress Path Testing of Realistically Cured Lime and Lime/Cement Stabilized Clay, 1288  
Tensile Strength Bearing Ratio and Slake Durability of Class F Fly Ash Stabilized with Lime and Gypsum, 1263
- Limit analysis**  
Numerical Analysis of T-Bar Penetration in Soft Clay, 53

## Liquefaction

- Limit equilibrium**  
Case History of Geosynthetic Reinforced Segmental Retaining Wall Failure, 921  
General Analytical Framework for Design of Flexible Reinforced Earth Structures, 909  
Seismic Bearing Capacity of Shallow Strip Footings Embedded in Slope, 30
- Limit states**  
Assessment of Variable Uncertainties for Reliability-Based Design of Foundations, 888  
Limit-State Curve of Base-Course Material and Its Relevance for Resilient Modulus Testing, 795  
Mitigating Risk from Abnormal Loads and Progressive Collapse, 1397  
Resistance Factors for Use in Shallow Foundation LRFD, 889
- Linear analysis**  
Comparison of Various Procedures for Progressive Collapse Analysis, 1402  
Three-Dimensional Linear and Simplified Nonlinear Soil Response Methods Based on an Input Wave Field, 46
- Linear systems**  
Effect of Internal Moment Release on the Eigenfrequencies of Combined Linear Systems, 519
- Liners**  
Design of Compacted Lateritic Soil Liners and Covers, 798
- Linings**  
Effect of Wet — Dry Cycles and Cation Exchange on Gas Permeability of Geosynthetic Clay Liners, 871  
Forces on Plunge Pool Slabs: Influence of Joints Location and Width, 936  
Microanalytical Characterizations of Eroded and Slaked Mudstone Proposed as Landfill Liner Material, 1953  
Optimal Design of a Compacted Soil Liner Containing SORptive Amendments, 686  
Physical Response of Geomembrane Wrinkles Overlying Compacted Clay, 902  
Safety Assessment of Concrete Tunnel Linings under Fire Load, 1534
- Liquefaction**  
Accounting for Soil Aging When Assessing Liquefaction Potential, 811  
Assessment of the Liquefaction Susceptibility of Fine-Grained Soils, 885  
CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, 873  
Critical Flotation Density of Pipelines in Soils Liquefied by Waves and Density of Liquefied Soils, 1879  
Degree of Saturation and Liquefaction Resistances of Sand Improved with Sand Compaction Pile, 803  
Development of Real-Time Safety Control System for Urban Gas Supply Network, 801  
DSC Model for Soil and Interface Including Liquefaction and Prediction of Centrifuge Test, 799  
Failure and Dilatancy Properties of Sand at Relatively Low Stresses, 582  
First-Order Reliability Method for Probabilistic Liquefaction Triggering Analysis using CPT, 809  
Guidelines for Pipeline On-Bottom Stability on Liquefied Noncohesive Seabeds, 1883

## Liquefaction

- How Reliable is the Plasticity Index for Estimating the Liquefaction Potential of Clayey Sands?, 790  
Influence of Nonplastic Fines on Shear Wave Velocity-Based Assessment of Liquefaction, 878  
Laboratory Study of Liquefaction due to Wave-Seabed Interaction, 856  
Large-Scale Experiments on Pore Pressure Generation underneath a Caisson Breakwater, 1884  
Liquefaction around Pipelines under Waves, 1880  
Liquefaction, Cyclic Mobility, and Failure of Silt, 845  
Liquefaction Hazard Mapping—Statistical and Spatial Characterization of Susceptible Units, 844  
Liquefaction Phenomena underneath Marine Gravity Structures Subjected to Wave Loads, 1885  
Liquefaction Resistance of Undisturbed and Reconstituted Samples of a Natural Coarse Sand from Undrained Cyclic Triaxial Tests, 797  
Liquefaction Susceptibility Criteria for Silts and Clays, 908  
Liquefaction-Induced Lateral Spreading in Near-Fault Regions during the 1999 Chi-Chi, Taiwan Earthquake, 922  
Logistic Regression Model for Evaluating Soil Liquefaction Probability using CPT Data, 843  
Mapping Liquefaction Potential Considering Spatial Correlations of CPT Measurements, 886  
Microbially Induced Cementation to Control Sand Response to Undrained Shear, 905  
Numerical Modeling of Wave-Induced Liquefaction around Pipelines, 1881  
Physics of Liquefaction Phenomena around Marine Structures, 1877  
Shear Localization Due to Liquefaction-Induced Void Redistribution in a Layered Infinite Slope, 897  
Soil-Pile Response to Blast-Induced Lateral Spreading. I: Field Test, 793  
Soil-Pile Response to Blast-Induced Lateral Spreading. II: Analysis and Assessment of the  $p-y$  Method, 794  
Stability of Submarine Pipelines on Liquefied Seabeds, 1878  
Standard Penetration Test-Based Probabilistic and Deterministic Assessment of Seismic Soil Liquefaction Potential, 10  
Strength Loss and Localization at Silt Interlayers in Slopes of Liquefied Sand, 7  
Stress Reduction Coefficient and Amplification Factor for Seismic Response of Ground, 26  
Stress Zones Near Displacement Piers: I. Plastic and Liquefied Behavior, 782  
Stress Zones near Displacement Piers: II. Radial Cracking and Wedging, 783  
Sudden Failure of a Heavily Loaded Container Pavement, 912  
Three-Dimensional Linear and Simplified Nonlinear Soil Response Methods Based on an Input Wave Field, 46  
Unsaturated Soils 2006, 2096  
Use of Artificial Neural Networks in the Prediction of Liquefaction Resistance of Sands, 917

## Litigation

- Alliancing in Australia — No-Litigation Contracts: A Tautology?, 1414  
Contractual Management in PPP Projects: Evaluation of Legal versus Relational Contracting for Service Delivery, 1415

## 2006 ASCE TRANSACTIONS

- The Effective Mediator, 1435  
"Is That Not Horrific?" — or "You Have Been Warned!" *Burchell v. Bullard* and Implications for English Construction Law, 1428  
Quantification of Costs for Dispute Resolution Procedures in the Construction Industry, 1429  
Utilizing Dispute Review Boards in Relational Contracting: A Case Study, 1436  
**Live loads**  
Full-Scale Field Tests on Flexible Pipes under Live Load Application, 1366  
Influence of Parapets and Aspect Ratio on Live-Load Distribution, 123  
Live-Load Distribution Factors for Prestressed Concrete, Spread Box-Girder Bridge, 160  
Sensitivity of Live Load Distribution Factors to Vehicle Spacing, 117  
Shear Live-Load Distribution Factors for I-Girder Bridges, 124  
Study of Turkish Bridge Standards Involving a Reinforced Concrete Arch Bridge, 1393  
**Load and resistance factor design**  
Assessment of Variable Uncertainties for Reliability-Based Design of Foundations, 888  
Comparative Study of Fatigue Provisions for the AASHTO Fatigue Guide Specifications and LRFR Manual for Evaluation, 169  
Reliability of Steel Frames Designed with Advanced Analysis, 1465  
Resistance Factors for Use in Shallow Foundation LRFD, 889  
**Load distribution**  
Approximate Series Solution for Analysis of FRP Composite Highway Bridges, 225  
Full-Scale Field Tests on Flexible Pipes under Live Load Application, 1366  
Influence of Parapets and Aspect Ratio on Live-Load Distribution, 123  
Influence of Secondary Elements and Deck Cracking on the Lateral Load Distribution of Steel Girder Bridges, 122  
Loading of a Gavel-Buried Steel Pipe Subjected to Rockfall, 913  
Sensitivity of Live Load Distribution Factors to Vehicle Spacing, 117  
Utilizing Clustering Techniques in Estimating Traffic Data Input for Pavement Design, 1759  
**Load factors**  
Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-05 (CD-ROM), 2076  
Real Options by Spreadsheet: Parking Garage Case Example, 1147  
Residential Building Loads: Review and Roadmap for the Future, 2083  
Resistance Factors for Use in Shallow Foundation LRFD, 889  
**Load tests**  
Behavior of Axially Loaded Pile Groups Driven in Clayey Silt, 814  
Cyclic Lateral Load Behavior of a Pile Cap and Backfill, 883  
Flexural Load Testing of Concrete-Filled FRP Tubes with Longitudinal Steel and FRP Rebar, 204

## SUBJECT INDEX

## Malaysia

- Identifying Effective and Ineffective Retrofits for Distortion Fatigue Cracking in Steel Bridges Using Field Instrumentation, 178
- Influence of Toughness on the Apparent Cracking Load of Fiber-Reinforced Concrete Slabs, 163
- Load Transfer in Rammed Aggregate Piers, 51
- Passive Earth Pressure Mobilization during Cyclic Loading, 884
- Quality Control Method for Pile Driving, 879
- Termination Criteria for Jacked Pile Construction and Load Transfer in Weathered Soils, 854
- Testing, Analysis, and Evaluation of a GFRP Deck on Steel Girders, 142
- Load transfer**
- Load Transfer in Rammed Aggregate Piers, 51
- Termination Criteria for Jacked Pile Construction and Load Transfer in Weathered Soils, 854
- Loading rate**
- Behavior of One-Dimensional Consolidation under Time-Dependent Loading, 480
- Effect of Penetration Rate on Penetrometer Resistance in Clay, 887
- Loads**
- Buckling of Simply Supported Rectangular Reissner — Mindlin Plates Subjected to Linearly Varying In-Plane Loading, 491
- Influence of Functionally Graded Material on Buckling of Skew Plates under Mechanical Loads, 528
- Nonlinear Equation for Flexural Stiffness of Slender Composite Columns in Major Axis Bending, 1477
- Numerical Model for Reinforced Soil Segmental Walls under Surcharge Loading, 841
- Preventing Disproportionate Collapse, 1396
- Safety Assessment of Concrete Tunnel Linings under Fire Load, 1534
- Localization**
- Double Strain Softening and Diagonally Crossing Shear Bands of Sand in Drained Triaxial Tests, 57
- Failure and Dilatancy Properties of Sand at Relatively Low Stresses, 582
- Modal Strain Energy Decomposition Method for Damage Localization in 3D Frame Structures, 533
- Strength Loss and Localization at Silt Interlayers in Slopes of Liquefied Sand, 7
- Locks**
- Glancing-Blow Impact Forces by a Barge Train on a Lock Approach Wall, 1150
- Logistics**
- Improving the Safety and Efficiency of Materials Transfer at a Construction Site by using an Elevator, 371
- Logistic Likelihood Analysis of Mediation Outcomes, 389
- Long waves**
- Maximum Fluid Forces in the Tsunami Runup Zone, 1903
- Prediction of Long Forcing Waves for Harbor Agitation Studies, 1871
- Well-Balanced Finite-Volume Model for Long-Wave Runup, 1866
- Loops**
- Dynamic Response of Closed-Loop System with Uncertain Parameters using Interval Finite-Element Method, 520
- Losses**
- Loss Estimation Analysis of Flat-Slab Structures, 1925
- Louisiana**
- Bivariate Flood Frequency Analysis Using the Copula Method, 1086
- Hurricane Katrina: Performance of Transportation Systems, 2074
- Special Report: The Big Uneasy, 2033
- Stage-Discharge Relations for Low-Gradient Tidal Streams using Data-Driven Models, 979
- Lysimeters**
- Design Considerations for Lysimeters Used to Evaluate Alternative Earthen Final Covers, 919
- Field Performance of a Compacted Clay Landfill Final Cover at a Humid Site, 906
- Machine foundations**
- Simplified Model for Vertical Vibrations of Surface Foundations, 838
- Magnetic fields**
- Calibration of Strapdown Magnetometers in Magnetic Field Domain, 68
- Dynamic Stability of Ferromagnetic Beam-Plates with Magnetoelastic Interaction and Magnetic Damping in Transverse Magnetic Fields, 476
- Maintenance**
- Adaptive Optimization and Systematic Probing of Infrastructure System Maintenance Policies under Model Uncertainty, 1156
- Application of Lean Concepts and Simulation Analysis to Improve Efficiency of Drainage Operations Maintenance Crews, 317
- Estimating Transition Probabilities in Markov Chain-Based Deterioration Models for Management of Wastewater Systems, 1802
- Impact of Quality on Building Costs, 1157
- Key Performance Indicators for Strategic Healthcare Facilities Maintenance, 322
- Knowledge Discovery in a Facility Condition Assessment Database using Text Clustering, 1142
- Optimizing Bridge Network Maintenance Management under Uncertainty with Conflicting Criteria: Life-Cycle Maintenance, Failure, and User Costs, 1620
- Standard Guidelines for the Design of Urban Stormwater Systems ASCE/EWRI 45-05; Standard Guidelines for Installation of Urban Stormwater Systems ASCE/EWRI 46-05; Standard Guidelines for the Operation and Maintenance of Urban Stormwater Systems ASCE/EWRI 47-05, 2089
- Using Advanced Inspection Technologies to Support Investments in Maintenance and Repair of Transportation Infrastructure Facilities, 1669
- Maintenance costs**
- Cost-Effectiveness of Railway Infrastructure Renewal Maintenance, 1729
- Short- and Long-Term Effects of Element Costs and Failure Costs in *Pontis*, 166
- Malaysia**
- Delay Mitigation in the Malaysian Construction Industry, 300

**Management**

Impact of Property Management Services on Affordable Housing Residents in Atlanta, Georgia, 1387

Influence of the National Performance Review on Supervisors in Government Organizations, 1920

**Managers**

Assessment with 360° Evaluations of Leadership Behavior in Construction Project Managers, 1246

Influences Impacting Leadership Development, 1245  
Sequence Planning for Electrical Construction, 324

**Manholes**

Experimental Study of Surcharged Flow at Combining Sewer Junctions, 1058

**Manufactured homes**

Incomplete Information Analysis for the Origin-Destination Survey Table, 1794

Supply Chain Analysis and Modeling for the Manufactured Housing Industry, 1771

Supply Chain Simulation Modeling for the Manufactured Housing Industry, 1797

**Manufacturing**

Supply Chain Analysis and Modeling for the Manufactured Housing Industry, 1771

**Mapping**

Application Framework for Mapping and Simulation of Waste Handling Processes in Construction, 408

Case Study: Mapping Tsunami Hazards Associated with Debris Flow into a Reservoir, 931

Compilation of a Map of Recent Vertical Crustal Movements in Eastern Canada using Geographic Information System, 1663

Detection of Illegal Dump Deposit with GPR: Case Study, 1955

Exploratory Map Animation for Post-Event Analysis of Wildfire Protective Action Recommendations, 1922

Flood Estimation by GIUH-Based Clark and Nash Models, 1124

Framework to Support the Representations of Semantic Mappings for a Hybrid Integration Strategy, 268

Frequency Analysis of Ground Snow Data and Production of the Snow Load Map using Geographic Information System for the Eastern Black Sea Region of Turkey, 1553

From a NEXRAD Rainfall Map to a Flood Inundation Map, 1074

HAZUS-MH Flood Loss Estimation Methodology. I: Overview and Flood Hazard Characterization, 1928

HAZUS-MH Flood Loss Estimation Methodology. II: Damage and Loss Assessment, 1929

Liquefaction Hazard Mapping—Statistical and Spatial Characterization of Susceptible Units, 844

Mapping Liquefaction Potential Considering Spatial Correlations of CPT Measurements, 886

Sequential Hybrid Inverse Mapping for State-Specified Design of Frames, 1581

Solving an Inverse Problem of a Meridian Arc in Terms of Computer Algebra System, 1641

Topological Mapping for Tension Structures, 1535

**Markov chains**

Constriction Size of Geotextile Filters, 2

Derivation of Transition Probability Matrices for Pavement Deterioration Modeling, 1678

Estimating Transition Probabilities in Markov Chain-Based Deterioration Models for Management of Wastewater Systems, 1802

Hybrid, Markov Chain-Based Model for Daily Streamflow Generation at Multiple Catchment Sites, 1097

Performance Prediction of Bridge Deck Systems using Markov Chains, 1378

**Markov process**

Markov-Based Optimization Model for Building Facilities Management, 407

**Maryland**

Two-Level Integrated Optimization System for Planning of Emergency Evacuation, 1751

**Masonry**

Analyses of a Two-Story Unreinforced Masonry Building, 1505

Assessment of Potential Seismic Damage to Residential Unreinforced Masonry Buildings in Northern Illinois, 1979

Cellular Automata Model for Predicting the Failure Pattern of Laterally Loaded Masonry Wall Panels, 276

Evolution of Bricks and Brick Masonry in the Early History of its Use in the Region of Today's Serbia, 1341

Experimental In-Plane Behavior of Tuff Masonry Strengthened with Cementitious Matrix—Grid Composites, 210

Homogenization Approach for the Limit Analysis of Out-of-Plane Loaded Masonry Walls, 1602

Lateral Load Tests on a Two-Story Unreinforced Masonry Building, 1504

Long Mechanical Interaction between Strengthening Materials and Preexisting Structures, 1334

Probabilistic Model for the Assessment of Historic Buildings under Permanent Loading, 1361

Recommendations for Seismic Evaluation and Retrofit of Low-Rise URM Structures, 1506

Renovation of the 17th-Century Ponte Lungo Bridge in Chioggia, Italy, 105

Strength and Elastic Properties of Stabilized Mud Block Masonry using Cement-Soil Mortars, 1313

Structural Monitoring and Integrity Assessment of Medieval Towers, 1605

Tensile Bond Strength of Soil-Cement Block Masonry Couplets using Cement-Soil Mortars, 1265

Using Crushed Clay Brick as Coarse Aggregate in Concrete, 1319

**Mass**

Construction of Customized Mass-Stiffness Pairs using Templates, 80

Diagnostic Curve for Estimating Soil Dispervisity and Instantaneously Injected Mass, 1194

Flow Computation and Mass Balance in Galerkin Finite-Element Groundwater Models, 1054

**Mass transfer**

Behavior of an Air Curtain Subjected to Transversal Pressure Variations, 611

Flow in Compound Channel with Abrupt Floodplain Contraction, 1026

Impact of Limiters on Accuracy of High-Resolution Flow and Transport Models, 443

Minimizing Mass Transfer Effects in Granular Iron Batch Tests Using GEM Reactors, 776

## SUBJECT INDEX

- Ozonation of 2-Chlorophenol in Aqueous Solutions with a Packed Contactor, 775
- Massachusetts**  
Evaluation of Contaminant Resuspension Potential during Cap Placement at Two Dissimilar Sites, 639
- Three-Dimensional Modeling for Estimation of Hydraulic Retention Time in a Reservoir, 710
- Material failure**  
Failure Behavior of Spruce Wood under Bending-Shear Combined Stress Field, 1271
- Material properties**  
Application of Graded Finite Elements for Asphalt Pavements, 459
- Constitutive Model for Rockfill Materials and Determination of Material Constants, 35
- Construction of Concrete-Faced Rockfill Dams with Weak Rocks, 849
- Determination of Honeycomb Material Properties: Existing Theories and an Alternative Dynamic Approach, 74
- Early Hydration Process of Portland Cement Paste by Electrical Measurement, 1272
- Effects of Silica Fume and Rice Husk Ash on the Properties of Heavyweight Concrete, 1301
- Elastic Constants Identification of Composite Materials using Single Angle-Ply Laminate, 560
- Evaluation of Pavement Curing Effectiveness and Curing Effects on Concrete Properties, 1302
- Exploring Concrete Slump Model using Artificial Neural Networks, 266
- "Giant Superelasticity Effect" in NiTi Superelastic Materials and Its Applications, 1360
- Hyperelasticity Model for Finite-Element Analysis of Natural and High Damping Rubbers in Compression and Shear, 440
- Identification and Interpretation of Micropipe Material Laws, 465
- Investigations on the Static Behavior of Self-Compacting Concrete Under-Reamed Piles, 1305
- Material-Related Aspects of Asphalt Recycling — State-of-the-Art, 1270
- New Approach for Seismic Nonlinear Analysis of Inelastic Framed Structures, 535
- Study of In Situ Pavement Material Properties Determined from FWD Testing, 1745
- Using UCS as a Surrogate Performance Standard at the NCSU NPL Site, 738
- Material tests**  
Correlation of Aggregate Test Parameters to Hot Mix Asphalt Pavement Performance in Hawaii, 1672
- Short and Medium Term Durability Evaluation of FRP-Confined Circular Concrete, 212
- Void Growth Model and Stress Modified Critical Strain Model to Predict Ductile Fracture in Structural Steels, 1627
- Materials**  
Simulation of Multidimensional Binary Random Fields with Application to Modeling of Two-Phase Random Media, 496
- Mathematical models**  
Asymptotic Solutions for One-Dimensional Dispersion in Rivers, 940
- Deformation of Pores in Viscoplastic Soil Material, 22
- Measurement**  
Determining Free Flight Performance by Surveying Engineering Techniques, 1653
- Determining the Desired Amount of Parking using Game Theory, 1778
- Earthquake Hydrodynamic Pressure on Dams, 1046
- Effects of Pier and Deck Flexibility on the Seismic Response of Isolated Bridges, 115
- Effects of Traffic Characteristics and Mounting Location on the Visibility of On-Premise Commercial Signs, 1758
- Efficient Solution of the Coupled One-Dimensional Surface — Two-Dimensional Subsurface Flow during Furrow Irrigation Advance, 1206
- Explicit Expression for Beach Response to Non-Stationary Forcing near a Groynes, 1867
- Flutter Phenomenon in Aeroelasticity and its Mathematical Analysis, 58
- Green's Function of the Linearized de Saint-Venant Equations, 447
- Hydrologic Modeling Inventory: Cooperative Research Effort, 1175
- Isotopic Fractionation of Tetrachloroethene Undergoing Biodegradation Supported by Endogenous Decay, 681
- Modeling of Settlement in Saturated and Unsaturated Municipal Landfills, 39
- Multilaminar Macromodel for Concrete Masonry: Formulation and Verification, 1635
- PCB Volatilization from Sediments, 594
- Physical Analog of the Linear Reservoir, 1089
- Temporal Variation in Consumer Spatial Behavior in Shopping Streets, 1792
- Mathematics**  
Elevation-Dependent Management of the Edwards Aquifer: Linked Mathematical and Dynamic Programming Approach, 1836
- General Validity of Conductivity Means in Unsaturated Flow Models, 1125
- New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. I: Formulation, 571
- Solving an Inverse Problem of a Meridian Arc in Terms of Computer Algebra System, 1641
- Turbulent Flow Friction Factor Calculation using a Mathematically Exact Alternative to the Colebrook — White Equation, 1017
- Meandering streams**  
Effects of Velocity Gradients and Secondary Flow on the Dispersion of Solutes in a Meandering Channel, 1061
- Evaluation of Dispersion Coefficients in Meandering Channels from Transient Tracer Tests, 1033
- Variation of Flow Pattern with Sinuosity in Sine-Generated Meandering Streams, 1031
- Measurement**  
Airfield and Highway Pavement: Meeting Today's Challenges with Emerging Technologies, 2047
- Analysis and Solution to Human-Induced Lateral Vibrations on a Historic Footbridge, 104
- Assessment of Dynamic Measurement Accuracy of GPS in Three Directions, 1656
- Assessment of Soil Moisture Dynamics of the Nebraska Sandhills using Long-Term Measurements and a Hydrology Model, 1216

## Measurement

- Automated Measurement of Railway Ballast Angularity, 1331  
Challenges in Predicting Power Output from Offshore Wind Farms, 430  
Comparison of Modeling and Measurement Accuracy of Road Condition Data, 1742  
Damage Identification Based on Dead Load Redistribution: Effect of Measurement Error, 1563  
Data Interpretation for In Situ Measurements of Cohesive Sediment Erosion, 990  
Deflection of the Vertical Components from GPS and Precise Leveling Measurements in Hong Kong, 1654  
Difference Between In Situ Flexible Pavement Measured and Calculated Stresses and Strains, 1725  
Dioxin in Storm-Water Runoff in Houston, Texas, 770  
Double-Pass Photovoltaic-Thermal Solar Air Collector with Compound Parabolic Concentrator and Fins, 433  
Early Hydration Process of Portland Cement Paste by Electrical Measurement, 1272  
Estimating Evaporation from Bare Soil using Soil Moisture Data, 1181  
Experimental Verification and Full-Scale Deployment of Global Positioning System to Monitor the Dynamic Response of Tall Buildings, 1561  
Impact of Particle Aggregated Microbes on UV Disinfection. II: Proper Absorbance Measurement for UV Fluence, 667  
Impact of Specimen Geometry on Dynamic Modulus Measurement Test Setup, 1314  
Interpretation of Impact Penetration Measurements in Soft Clays, 848  
Measurement Design Is an Opportunity to Learn, 1917  
Measurement of Light Interception by Navel Orange Orchard Canopies: Case Study of Lindsay, California, 1165  
Measuring System for Cracks in Concrete using Multitemporal Images, 1651  
Method for Measurement of Canopy Interception under Sprinkler Irrigation, 1185  
Modeling Substrate Interactions during Aerobic Biodegradation of Mixtures of Vinyl Chloride and Ethene, 705  
Normalizing the CPT for Overburden Stress, 812  
Performance of Slit Weir, 1029  
Polychromatic UV Fluence Measurement using Chemical Actinometry, Biodosimetry, and Mathematical Techniques, 693  
Probability Density Functions in the Analysis of Hydraulic Conductivity Data, 1116  
Quantitative Measurement of Successful Performance from the Project Manager's Perspective, 415
- ### Measuring instruments
- Historic Discharge Measurements in Three Rhine Branches, 945
- ### Mechanical properties
- Behavior of High Strength Structural Steel at Elevated Temperatures, 1631  
Determinations of Honeycomb Material Properties: Existing Theories and an Alternative Dynamic Approach, 74  
Empirical Punching Shear Failure Theory for Oriented Strand Boards: Preliminary Study, 1487  
Geomechanics II — Testing, Modeling, and Simulation, 2069

## 2006 ASCE TRANSACTIONS

- High-Strength Self-Compacting Concrete Exposed to Fire Test, 1349  
Mars Soil Mechanical Properties and Suitability of Mars Soil Simulants, 73  
Mechanical Properties and Environmental Assessment of Mortars Containing Metallic Oxides, 706  
Property Modification Factors for Seismically Isolated Bridges, 140
- ### Mechanical systems
- Prototype Tool for Mechanical, Electrical, and Plumbing Coordination, 249
- ### Mechanics
- Lodging Velocity for an Emergent Aquatic Plant in Open Channels, 1032  
Microvoid Damage Model with Material Dilation for Ductile Fracture, 546
- ### Membranes
- Continuous Cometabolic Transformation of 4-Chlorophenol in the Presence of Phenol in a Hollow Fiber Membrane Bioreactor, 617
- ### Mechanics and Test Study of Two-Dimensional Flexible Membranes, 92
- ### Membrane Analysis and Minimum Weight Design of Submerged Spherical Domes, 1463
- ### Membrane Behavior of Two Backfills from Field-Constructed Soil-Bentonite Cutoff Walls, 892
- ### Modeling Water Movement and Flux from Membrane Pervaporation Systems for Wastewater Microirrigation, 714
- ### Role of Particle Size and Ammonium Oxidation in Removal of 17 $\alpha$ -Ethynodiol in Bioreactors, 757
- ### Simultaneous Removal of Organic Matter and Nitrogen Compounds in Autoaoerated Biofilms, 727
- ### Memoirs of deceased members
- Arnold, Maurice; ASCE Member, 2098  
Kulchin, Larry; ASCE Member, 2099
- ### Mercury
- Distribution of Methylmercury in a Mercury-Contaminated Ecosystem, 1961  
Removal of Inorganic Mercury from Polluted Water using Structured Nanoparticles, 621  
Sulfur Impregnation on Activated Carbon Fibers through H<sub>2</sub>S Oxidation for Vapor Phase Mercury Removal, 615
- ### Mesh generation
- Parallel Multigrid Detached Eddy Simulation Algorithm for Three-Dimensional Unsteady Incompressible Flows on Unstructured Meshes, 82
- ### Validation of a Large-Eddy Simulation Model to Simulate Flow in Pump Intakes of Realistic Geometry, 1062
- ### Metals
- Damage-Coupled Progressive Failure and Yield Line Analyses of Metal Plates, 483  
Metallic Characterization of Foundry By-Products per Waste Streams and Leaching Protocols, 665  
Metals Removal from Municipal Waste Incinerator Fly Ashes and Reuse of Treated Leachates, 654  
New Design Procedure for Wind Uplift Resistance of Architectural Metal Roofing Systems, 100

## SUBJECT INDEX

## Mixing

### Methane

Characterization of Methane Flux and Oxidation at a Solid Waste Landfill, 607

### Methodology

Bivariate Flood Frequency Analysis Using the Copula Method, 1086

Development of a Methodology to Predict Through-Trip Rates for Small Communities, 1784

Development of an Optimization Methodology for Adaptive Traffic Sign Control at Diamond Interchanges, 1732

Methodology for Usability Evaluation of Corporate Memory Design Reuse Systems, 274

Microcosm Approach to Study Transport of Polychlorinated Biphenyls in Sediment, 676

Overparameterized Least-Squares Adjustment with Linear Models for Geodetic and Surveying Applications, 1659

### Mexico

Case Study: Dam Safety during Construction, Lessons of the Overtopping Diversion Works at Aguamilpa Dam, 1045

Performance and Analyses of Mechanically Stabilized Earth Walls in the Tecomán, Mexico Earthquake, 1395

### Microbes

Bioreduction of Hexavalent Chromium in Flow-Through Quartz Sand Columns, 623

Impact of Particle Aggregated Microbes on UV Disinfection. I: Evaluation of Spore — Clay Aggregates and Suspended Spores, 666

Impact of Particle Aggregated Microbes on UV Disinfection. II: Proper Absorbance Measurement for UV Fluence, 667

Microbiologically Induced Cementation to Control Sand Response to Undrained Shear, 905

### Micromechanics

Anisotropic Nonlinear Elastic Model for Particulate Materials, 874

Deformation of Pores in Viscoplastic Soil Material, 22

Effective Medium Theories for Multicomponent Poroclastic Composites, 486

Effective Moduli of Coated Particulate Composites with BCC Structure at High Concentration, 525

Finite-Element Analysis of Hot Mix Asphalt Microstructure using Effective Local Material Properties and Strain Gradient Elasticity, 451

Influence of Micromaterial Heterogeneity on Strain Localization in Granular Materials, 37

Input Parameters of Discrete Element Methods, 506

Microscopic Evaluation of Strain Distribution in Granular Materials during Shear, 785

A Stochastic Transformation Field Theory for Heterogeneous Materials, 564

### Microscopy

Effect of Ozone on Filamentous Bulking in a Laboratory Scale Activated Sludge Reactor using Respirometry and INT-Dehydrogenase Activity, 713

Microscopic Evaluation of Strain Distribution in Granular Materials during Shear, 785

Role of an Amorphous Silica in Portland Cement Concrete, 1348

### Microstructure

Experimental Study of Macro- and Microbehavior of Natural Diatomite, 833

Macro- and Microstructural Investigations on Strength and Durability of Pumice Concrete at High Temperature, 1320

Microstructure and Compactive Instabilities of a Stabilized Residue, 1290

Role of an Amorphous Silica in Portland Cement Concrete, 1348

Thermomechanical Framework for the Constitutive Modeling of Asphalt Concrete, 15

### Microtunneling

Soil Penetration Modeling in Microtunneling Projects, 347

### Middle East

3D Model Application to Study Residual Flow in the Arabian Gulf, 1891

Three-Dimensional Modeling of the Ruwais Coastal Area of United Arab Emirates, 1902

### Mine wastes

Site-Specific Study on Stabilization of Acid-Generating Mine Tailings using Coal Fly Ash, 1277

Stabilization of Arsenic-Bearing Sludges using Lime, 1276

Treatment of Acid Rock Drainage in a Meromictic Mine Pit Lake, 640

### Mineralogy

Role of an Amorphous Silica in Portland Cement Concrete, 1348

### Minimum weight design

Genetic Algorithm Based Construction-Conscious Minimum Weight Design of Seismic Steel Moment-Resisting Frames, 1444

Membrane Analysis and Minimum Weight Design of Submerged Spherical Domes, 1463

### Mining

Protection Measures against Mine Subsidence Taken at a Building Site, 1278

### Minnesota

Landmark Library, 2021

### Minority groups

Development of New Faculty: Summary of the NSF-CMS WEE Workshop, 1418

### Missiles

Large Wind Missile Impact Capacity of Residential and Light Commercial Buildings, 1990

### Mississippi

Hurricane Katrina: Performance of Transportation Systems, 2074

### Missouri

Case Study of Factors Affecting Urban Residential Construction in St. Louis, 1786

Creating a New School of Computer Science and Engineering in Kansas City, 1912

### Mixed waste

Design Factors Affecting the Flow of Water through Below-Ground Concrete Vaults, 737

### Mixing

Asphalt Mix Design and Construction: Past, Present, and Future, 2050

## Mixing

- Commercial Odor-Reducing Agents for Minimizing the Odor Potential of Asphalt Binders, 645  
Comparison of SF<sub>6</sub> and Fluorescein as Tracers for Measuring Transport Processes in a Large Tidal River, 774  
Distribution Deviation of Large Aggregates from Uniformity in Waste Containment Concrete. I: Quantitative Model Formulation, 1268  
Distribution Deviation of Large Aggregates from Uniformity in Waste Containment Concrete. II: Experimental Results and Quality Assurance, 1269  
Effects of Velocity Gradients and Secondary Flow on the Dispersion of Solutes in a Meandering Channel, 1061  
Fundamental Characteristics of Cement-Admixed Clay in Deep Mixing, 1279  
Multiple Tandem Jets in Cross-Flow, 1027
- Mixtures**  
Exploring Concrete Slump Model using Artificial Neural Networks, 266  
Fatigue and Healing of Asphalt Mixtures: Discriminate Analysis of Fatigue Curves, 1680  
Freezing—Thawing Model for Soils and Rocks, 1286  
Material-Related Aspects of Asphalt Recycling—State-of-the-Art, 1270  
Rate-Type Model for Bituminous Mixtures and Its Application to Sand Asphalt, 497
- Mobility**  
Robust Mobile Ad Hoc Space for Collaboration to Support Disaster Relief Efforts Involving Critical Physical Infrastructure, 247
- Modal analysis**  
Cross-Modal STrain Energy Method for Estimating Damage Severity, 477  
Dynamic Anomalies in a Modular Bridge Expansion Joint, 157  
Fundamental Frequency Testing of Reinforced Concrete Beams, 1384  
Modal Strain Energy Decomposition Method for Damage Localization in 3D Frame Structures, 533  
Stiffness Assessment through Modal Analysis of an RC Slab Bridge before and after Strengthening, 162  
Structural Damage Detection via Modal Data with Genetic Algorithms, 1586  
System Identification and Damage Detection of a Pre-stressed Concrete Beam, 1606  
Use of Modal Flexibility for Damage Detection and Condition Assessment: Case Studies and Demonstrations on Large Structures, 1607
- Model analysis**  
Adaptive Modal Combination Procedure for Nonlinear Static Analysis of Building Structures, 1609  
Approximate Series Solution for Analysis of FRP Composite Highway Bridges, 225  
Measured and Predicted Herbicide Removal by Mulch, 702
- Model studies**  
Disaster Recovery System Model with E-Government Case Study, 1937  
Enhancement of Remediation of NAPL Contaminated Fractured Permeable Formations—Modeling Study, 589  
Marine Wastewater Discharges from Multiport Diffusers. III: Stratified Stationary Water, 971

## 2006 ASCE TRANSACTIONS

- Marine Wastewater Discharges from Multiport Diffusers. IV: Stratified Flowing Water, 972
- Model tests**  
Distribution of Compressive Stresses in Transversely Posttensioned Concrete Bridge Decks, 110  
Dynamic Uplift Scenarios for Floating Ice, 182  
Experimental and Theoretical Investigations on Geocell-Supported Embankments, 14
- Model verification**  
Assessing the Hydrologic Performance of Best Management Practices, 1101  
Validation of the Hydrological Processes in a Hydrological Model, 1117
- Models**  
Airfield and Highway Pavement: Meeting Today's Challenges with Emerging Technologies, 2047  
Application of Hygrothermal Modeling Tool to Assess Moisture Response of Exterior Walls, 101  
Behavior and Modeling of Fiber Reinforced Polymer-Confining Concrete, 9  
Bond of GFRP Bars in Concrete: Experimental Study and Analytical Interpretation, 227  
Catastrophe Risk Models for Wildfires in the Wildland—Urban Interface: What Insurers Need, 1938  
CBD Oriented Commuters' Mode and Residential Location Choices in an Urban Area with Surface Streets and Rail Transit Lines, 1799  
Challenges in Predicting Power Output from Offshore Wind Farms, 430  
Condition Rating Model for Underground Infrastructure Sustainable Water Mains, 1376  
Cracking Tendency of Self-Compacting Concrete Subjected to Restrained Shrinkage: Experimental Study and Modeling, 1266  
Decision Tree Modeling Using Integrated Multilevel Stochastic Networks, 412  
Deterministic-Based Model of Slow Sand Filtration. II: Model Application, 698  
Developing a Web-Based System for Large-Scale Environmental Hydraulics Problems with Application to Oil Spill Modeling, 264  
Development of GIS-Based Model to Estimate Relative Reductions in Crop Yield due to Salinity and Waterlogging, 1227  
Distribution Deviation of Large Aggregates from Uniformity in Waste Containment Concrete. I: Quantitative Model Formulation, 1268
- Effect of Contact Force Models on Granular Flow Dynamics, 566  
Entropy Models of Trip Distribution, 1774  
Exploring Concrete Slump Model using Artificial Neural Networks, 266  
Freezing—Thawing Model for Soils and Rocks, 1286  
Geomechanics II—Testing, Modeling, and Simulation, 2069  
Growth and Decay of Estuary Ice Cover, 184  
HAZUS—Its Development and Its Future, 1926  
HAZUS Earthquake Loss Estimation Methods, 1927  
HAZUS-MH Flood Loss Estimation Methodology. I: Overview and Flood Hazard Characterization, 1928  
HAZUS-MH Flood Loss Estimation Methodology. II: Damage and Loss Assessment, 1929  
HAZUS-MH Hurricane Model Methodology. I: Hurricane Hazard, Terrain, and Wind Load Modeling, 1930

## SUBJECT INDEX

- HAZUS-MH Hurricane Model Methodology. II: Damage and Loss Estimation, 1931  
Identification and Modeling of Permanent Deformations of Asphalt Concrete, 458  
Incomplete Information Analysis for the Origin-Destination Survey Table, 1794  
Material Spatial Variability and Slope Stability for Weak Rock Masses, 796  
Methodology for Ranking the Elements of Water-Supply Networks, 1160  
Microvoid Damage Model with Material Dilatation for Ductile Fracture, 546  
Modeling and Analysis of the Link between Accessibility and Employment Growth, 1703  
Modeling and Analyzing the Impact of Technology on Data Capture and Transfer Processes at Construction Sites: A Case Study, 401  
Modeling of Functional Construction Requirements for Constructability Analysis, 418  
Modeling Response of Flexible High-Aspect-Ratio Wings to Wind Turbulence, 70  
Monitoring Snow-Cover Depletion by Coupling Satellite Imagery with a Distributed Snowmelt Model, 1808  
Multi-Agent Framework for General-Purpose Situational Simulations in the Construction Management Domain, 261  
Neural Network-Wavelet Microsimulation Model for Delay and Queue Length Estimation at Freeway Work Zones, 1697  
New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. I: Formulation, 571  
New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. II: Applications, 572  
Optimal Design in the Presence of Modeling Uncertainties, 77  
Overparameterized Least-Squares Adjustment with Linear Models for Geodetic and Surveying Applications, 1659  
Parameter Estimation for the Nonlinear Muskingum Model using the BFGS Technique, 1217  
Predicting Residual Strength in Unsaturated Concrete Exposed to Sulfate Attack, 1298  
Prediction Models for Debonding Failure Loads of Carbon Fiber Reinforced Polymer Retrofitted Reinforced Concrete Beams, 193  
Simulating Activated Sludge System by Simple-to-Advanced Models, 587  
Size Effect on Shear Strength of Deep Beams: Investigating the Strut-and-Tie Model, 1507  
Soil and Rock Behavior and Modeling, 2088  
Supply Chain Analysis and Modeling for the Manufactured Housing Industry, 1771  
Supply Chain Simulation Modeling for the Manufactured Housing Industry, 1797  
Unified Sand Model Based on the Critical State and Generalized Plasticity, 580  
Validation of a Large-Eddy Simulation Model to Simulate Flow in Pump Intakes of Realistic Geometry, 1062  
Watershed and River Systems Management Program: Overview of Capabilities, 1174  
Wave Forcing of Small Floating Bodies, 1874

## Monitoring

- Moisture**  
Analysis of Deep Moisture Barriers in Expansive Soils. II: Water Flow Formulation and Implementation, 44  
Application of Hydrothermal Modeling Tool to Assess Moisture Response of Exterior Walls, 101  
Bitumen Surface Energy Characterization Using a Contact Angle Approach, 1350  
Considerations from the Design of Intercepting Drainage for Collecting Water from Seep Areas, 1231  
Design of Compacted Lateritic Soil Liners and Covers, 798  
Effect of Test Piece Size on Rheological Behavior of Wood Composites, 518  
Effect of Wet—Dry Cycles and Cation Exchange on Gas Permeability of Geosynthetic Clay Liners, 871  
Evaluation of Pavement Curing Effectiveness and Curing Effects on Concrete Properties, 1302  
Moisture Effects on Elastic and Viscoelastic Properties of CFRP Rebars and Vinyl Ester Binder, 1340  
Peel and Shear Fracture Characterization of Debonding in FRP Plated Concrete Affected by Moisture, 192  
Predicting Residual Strength in Unsaturated Concrete Exposed to Sulfate Attack, 1298  
Rational Approach for Base Type Selection, 1746  
**Moisture content**  
Modified Kostiakov Infiltration Function: Accounting for Initial and Boundary Conditions, 1230  
**Moment distribution**  
Live-Load Distribution Factors for Prestressed Concrete, Spread Box-Girder Bridge, 160  
**Monitoring**  
Ambient Vibration Monitoring of a Highway Bridge Undergoing a Destructive Test, 163  
Application of Cement-Based Piezoelectric Sensors for Monitoring Traffic Flows, 1724  
Assessing Performance under Regulatory Evolution: A European Transit System Perspective, 1798  
Assignment of Seasonal Factor Categories to Urban Coverage Count Stations using a Fuzzy Decision Tree, 1735  
Bayesian Belief Networks to Integrate Monitoring Evidence of Water Distribution System Contamination, 1825  
CFRP Repair and Strengthening of Structurally Deficient Piles: Design Issues and Field Application, 191  
Comparison of Physical Sampling and Real-Time Monitoring Strategies for Designing a Contamination Warning System in a Drinking Water Distribution System, 1834  
Concentration—Duration—Frequency Curves for pH in a Stream in the Great Smoky Mountains, 765  
Damage Identification Based on Dead Load Redistribution: Methodology, 1562  
Development and Implementation of a Continuous Strain Monitoring System on a Multi-Girder Composite Steel Bridge, 179  
Enhancing Short-Term Traffic Forecasting with Traffic Condition Information, 1712  
Fast-Track Urban Freeway Rehabilitation with 55-H Weekend Closures: I-710 Long Beach Case Study, 334  
Identification of Contaminant Sources in Water Distribution Systems using Simulation—Optimization Method: Case Study, 1827

## Monitoring

- Identification of the Location and Level of Damage in Multiple-Bolted-Joint Structures by PZT Actuator-Sensors, 1469  
Impact of Tunnel Reconstruction on Stream Water Quality in Great Smoky Mountains Natl. Park, 1129  
In-Service Durability Performance of Water Tanks, 1377  
In-Service Evaluation of Cable-Stayed Bridges, Overview of Available Methods, and Findings, 175  
Interpretation of Automatically Monitored Lifting Equipment Data for Project Control, 256  
Locating Monitors in Water Distribution Systems: Red Team-Blue Team Exercise, 1832  
Long-Term Durability of State Street Bridge on Interstate 80, 125  
Long-Term Structural Health Monitoring of the San Ysidro Bridge, 1365  
Model for Automated Monitoring of Fall Hazards in Building Construction, 360  
Monitoring of Steel Railway Floor Beams Prestressed by Steel Plates, 171  
Natural Attenuation Assessment using Mineral Data, 1968  
Postconstruction Environmental Monitoring of a Fly Ash-Based Road Subbase, 1993  
Predictability of Annual Sediment Loads based on Flood Events, 1108  
Spatial Uncertainty Modeling of Climate Processes for Extreme Hydrogeomorphological Events Hazard Monitoring, 758  
Structural Performance Monitoring of an Unstabilized Fly Ash-Based Road Subbase, 1769  
System for In-Service Strain Monitoring of Ordinary Bridges, 170  
Uncertainty Analysis of Mound Monitoring for Recharged Water from Surface Spreading Basins, 762  
Use of Modal Flexibility for Damage Detection and Condition Assessment: Case Studies and Demonstrations on Large Structures, 1607  
Vibration Performance of a Large Cantilever Grandstand during an International Football Match, 1385  
Wavelet-Based Vibration Sensor Data Compression Technique for Civil Infrastructure Condition Monitoring, 275
- Monte Carlo method**
- Applying Method of Moments to Model Reliability of Pavements Infrastructure, 1706  
Derived Willingness-to-Pay for Household Water Use with Price and Probabilistic Supply, 1845  
Distribution System Contamination Events: Exposure, Influence, and Sensitivity, 1830  
Evaluation of Karhunen-Loeve, Spectral, and Sampling Representations for Stochastic Processes, 453  
Galerkin Solution for Linear Stochastic Algebraic Equations, 570  
Influence of Uncertainties in the Estimation Procedure of Floodwater Level, 1036  
Material Spatial Variability and Slope Stability for Weak Rock Masses, 796  
Model for Analysis of Factors Affecting Construction Schedule in Highway Work Zones, 1717  
Optimal Inspection Scheduling of Steel Bridges using Nondestructive Testing Techniques, 134  
Probabilistic Stability Analyses of Embankments Based on Finite-Element Method, 911

## 2006 ASCE TRANSACTIONS

- Reliability of Steel Frames Designed with Advanced Analysis, 1465  
Undrained Bearing Capacity of Two-Strip Footings on Spatially Random Soil, 54  
**Moor**  
Moondust and More, 2010  
Moondust and More, 2011  
Structural Design of a Lunar Habitat, 71  
**Moorings**  
Coupled Surge-Heave Motions of a Moored System: I: Model Calibration and Parametric Study, 501  
Coupled Surge-Heave Motions of a Moored System: II: Stochastic Analysis and Simulations, 502  
Experimental Study on the Hydrodynamics of a Floating Production, Storage, and Offloading System, 1861  
Modeling of Sealed Interaction of Oceanographic Moorings in the Frequency Domain, 1898  
**Morphology**  
Coastal Dynamics 2005 -- State of the Practice, 2055  
**Mortars**  
Long Mechanical Interaction between Strengthening Materials and Preexisting Structures, 1334  
Mechanical Properties and Environmental Assessment of Mortars Containing Metallic Oxides, 706  
Strength and Elastic Properties of Stabilized Mud Block Masonry using Cement-Soil Mortars, 1313  
Tensile Bond Strength of Soil-Cement Block Masonry Couplets using Cement-Soil Mortars, 1265  
**Motion**  
Frequency Dependence of Human Response to Wind-Induced Building Motion, 1468  
New Approach to Mission Design Based on the Fundamental Equations of Motion, 65  
Viscous Effect on the Roll Motion of a Rectangular Structure, 454  
**Motivation**  
Motivational Climate of Construction Apprentice, 341  
Proposed Subcontractor-Based Employee Motivational Model, 303  
**Mountain streams**  
New Facility to Study River Abrasion Processes, 994  
**Multiple objective analysis**  
Genetic Algorithm Based Construction-Conscious Minimum Weight Design of Seismic Steel Moment-Resisting Frames, 1444  
**Multiple purpose structures**  
Multifunctional Hybrid GFRP/Steel Joint for Concrete Slab Structures, 244  
**Municipal engineering**  
Distribution System Contamination Events: Exposure, Influence, and Sensitivity, 1830  
Modeling Ventilation Phenomenon in Sanitary Sewer Systems: A System Theoretic Approach, 1008  
**Municipal wastes**  
Anaerobic Filter Treatment of Municipal Wastewater: Biosolids Behavior, 585  
Effect of Gas on Pore Pressures in Wet Landfills, 829  
Enhancement of Anaerobic Digestion of Excess Municipal Sludge with Thermal and/or Oxidative Treatment, 670

## SUBJECT INDEX

## Neural networks

- Estimating the Hydraulic Conductivity of Landfilled Municipal Solid Waste using the Borehole Permeameter Test, 671
- Integration of Processes to Treat Wastewater and Source-Separated Urine, 620
- Metals Removal from Municipal Waste Incinerator Fly Ashes and Reuse of Treated Leachates, 654
- Organic Hazardous Substances in Graywater from Swedish Households, 700
- Sludge Blanket Height and Flow Pattern in UASB Reactors: Temperature Effects, 699
- Start at the Source, 2001
- Unit Weight of Municipal Solid Waste, 893
- Municipal water**
- Delay between Sensing and Response in Water Contamination Events, 1145
- Sensor Placement in Municipal Water Networks with Temporal Integer Programming Models, 1823
- Natural frequency**
- Electroelastic Response of a Laminated Composite Plate with Piezoelectric Sensors and Actuators, 526
- Fundamental Frequency Testing of Reinforced Concrete Beams, 1384
- Investigation of Foundation Vibrations Resting on a Layered Soil System, 789
- Natural Frequencies of a Structure with Bounded Uncertainty, 578
- Selection of Physical and Geometrical Properties for the Confinement of Vibrations in Nonhomogeneous Beams, 72
- System Identification of Partially Restrained Composite Plates using Measured Natural Frequencies, 521
- Natural gas**
- Assessment of the Impact of Improvement Measures on Air Quality: Case Study of Delhi, 1714
- Feasibility of Using Natural Zeolites to Remove Sodium from Coal Bed Methane-Produced Water, 771
- Optimization of Investments in Natural Gas Distribution Networks, 425
- Navigation**
- Glancing-Blow Impact Forces by a Barge Train on a Lock Approach Wall, 1150
- Nearshore**
- Frazil Ice Blockage of Water Intakes in the Great Lakes, 1011
- Modeling Near-Shore Waves, Surface Rollers, and Undertow Velocity Profiles, 1896
- Nearshore Wave Modeling with High-Order Boussinesq-Type Equations, 1887
- Numerical and Experimental Study on Ship Wash Including Wave-Breaking on Shore, 1889
- Nearshore circulation**
- Development and Validation of a Quasi-Three-Dimensional Coastal Area Morphological Model, 1900
- Fully Nonlinear Boussinesq-Type Equations for Waves and Currents over Porous Beds, 457
- Nebraska**
- Assessment of Soil Moisture Dynamics of the Nebraska Sandhills using Long-Term Measurements and a Hydrology Model, 1216
- Overture to Omaha, 2024
- Negotiations**
- A Study of Styles and Outcomes in Construction Dispute Negotiation, 368
- Utilizing Dispute Review Boards in Relational Contracting: A Case Study, 1436
- Nepal**
- Design Errors: Inefficiency or Carelessness of Designer, 1383
- Netherlands**
- Designed for Dry Feet: Flood Protection and Land Reclamation in the Netherlands, 2059
- Historic Discharge Measurements in Three Rhine Branches, 945
- Network analysis**
- Locating Monitors in Water Distribution Systems: Red Team-Blue Team Exercise, 1832
- Network design**
- Novel Cellular Automata Approach to Optimal Water Distribution Network Design, 250
- Optimal Transit Route Network Design Problem with Variable Transit Demand: Genetic Algorithm Approach, 1667
- Using a Simulated Annealing Algorithm to Solve the Transit Route Network Design Problem, 1676
- Networks**
- Application of Artificial Neural Network Model in Estimation of Wave Spectra, 1894
- Base Station Establishment using Multiple Global Positioning Satellite Stations and Free Net Approach, 1644
- Bayesian Network for E/M Impedance-Based Damage Identification, 267
- Decision Tree Modeling Using Integrated Multilevel Stochastic Networks, 412
- Deployment of Fiber Optic Networks through Underground Sewers in North America, 1737
- Optimal Nonlocal and Asymmetric Structural Damping using Regenerative Force Actuation Networks, 532
- Optimization of Investments in Natural Gas Distribution Networks, 425
- Probability-Based Bridge Network Performance Evaluation, 167
- Robustness Analysis of Two-Dimensional Networks, 1664
- Simulated Annealing – Genetic Algorithm for Transit Network Optimization, 251
- Solution for Water Distribution Systems under Pressure-Deficient Conditions, 1818
- Neural networks**
- Active Control with Optical Fiber Sensors and Neural Networks. I: Theoretical Analysis, 1566
- Active Control with Optical Fiber Sensors and Neural Networks. II: Experimental Verification, 1567
- Analysis of Strength of Concrete using Design of Experiments and Neural Networks, 1329
- ANN and Fuzzy Logic Models for Simulating Event-Based Rainfall-Runoff, 1064
- Application of Artificial Neural Network Model in Estimation of Wave Spectra, 1894
- Application of Support Vector Machine in Lake Water Level Prediction, 1091
- Artificial Neural Network Modeling of Dissolved Oxygen in a Wetland Pond: The Case of Hovi, Finland, 1090

## Neural networks

- Classifying Construction Contractors Using Unsupervised-Learning Neural Networks, 411  
Comparison of Three Alternative ANN Designs for Monthly Rainfall-Runoff Simulation, 1122  
Electronic Nose — Membrane Interface Probe for Geoenvironmental Site Characterization, 882  
Empirical Approach for Determining Ultimate FRP Strain in FRP-Strengthened Concrete Beams, 201  
Exploring Concrete Slump Model using Artificial Neural Networks, 266  
General Approach for Training Back-Propagation Neural Networks in Vibration Control of Multidegree-of-Freedom Structures, 269  
Modal Seismic Control of Building Frames by Artificial Neural Network, 252  
Neural Networks and Principal Component Analysis for Identification of Building Natural Periods, 279  
Neural Networks for Estimating the Productivity of Concreting Activities, 353  
Neural Network-Wavelet Microsimulation Model for Delay and Queue Length Estimation at Freeway Work Zones, 1697  
New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. I: Formulation, 571  
New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. II: Applications, 572  
Novel Approach to Integration of Numerical Modeling and Field Observations for Deep Excavations, 872  
Optimal Pumping from Skimming Wells, 1118  
Prediction of Concrete Strength using Neural-Expert System, 1311  
Prediction of Soil Composition from CPT Data using General Regression Neural Network, 272  
Reliable Real-Time Framework for Short-Term Freeway Travel Time Prediction, 1765  
Role of Learning Algorithm in Neural Network-Based Backcalculation of Flexible Pavements, 287  
Runoff and Sediment Yield Modeling using Artificial Neural Networks: Upper Siwana River, India, 1078  
Semidistributed Form of the Tank Model Coupled with Artificial Neural Networks, 1112  
Short-Term Freeway Traffic Flow Prediction: Bayesian Combined Neural Network Approach, 1675  
Stage-Discharge Relations for Low-Gradient Tidal Streams using Data-Driven Models, 979  
Use of Artificial Neural Networks in the Prediction of Liquefaction Resistance of Sands, 917
- Nevada**  
Estimating Infiltration in the Upper Split Wash Watershed, Yucca Mountain, NV, 1083  
Impact of Politics on the Colorado River Basin Water Agreement: In-Depth Administrative Analysis, 1911  
Long-Term Dynamic Modeling Approach to Quantifying Attached Algal Growth and Associated Impacts on Dissolved Oxygen in the Lower Truckee River, Nevada, 739  
Short Circuit, 2041
- New Jersey**  
Modeling and Analysis of the Link between Accessibility and Employment Growth, 1703  
Urban Bicycle Route Safety Rating Model Application in Jersey City, New Jersey, 1716

## 2006 ASCE TRANSACTIONS

### New Mexico

- Impact of Politics on the Colorado River Basin Water Agreement: In-Depth Administrative Analysis, 1911  
Improving Air-Cooled Condenser Performance in Combined Cycle Power Plants, 429  
Investigation of Heaving at Holloman Air Force Base, New Mexico, 1370  
Long-Term Structural Health Monitoring of the San Ysidro Bridge, 1365

### New York

- Battery-Joralemon Street Tunnel, 1374  
Challenges of Underpinning Two Landmark Buildings, 1985  
Completing the Circle, 2023  
Finite-Element Crash Test Simulation of New York Portable Concrete Barrier with I-Shaped Connector, 1481  
History and Aesthetics of the Bronx-Whitestone Bridge, 127  
Impacts of the 2001 World Trade Center Attack on New York City Critical Infrastructures, 1163  
Landmark Reinvented, 2007  
Market Fresh, 2019  
Modeling and Analysis of the Link between Accessibility and Employment Growth, 1703  
New Life for Onondaga Lake, 2014  
Rapid Bridge Replacement: Processes, Techniques, and Needs for Improvements, 400  
Starting Over, 2035

### New York City

- Battery-Joralemon Street Tunnel, 1374  
Challenges of Underpinning Two Landmark Buildings, 1985  
Completing the Circle, 2023  
Impacts of the 2001 World Trade Center Attack on New York City Critical Infrastructures, 1163  
Landmark Reinvented, 2007  
Market Fresh, 2019  
Starting Over, 2035

### Nigeria

- Comparative Absorption of Crude Oil from Fresh and Marine Water using Recycled Rubber, 723  
Construction Delays and Their Causative Factors in Nigeria, 354

### Nighttime construction

- Lighting Requirements for Nighttime Highway Construction, 331

### Nitrates

- Biodegradability of Surfactants under Aerobic, Anoxic, and Anaerobic Conditions, 613  
Development of a Response Surface for Prediction of Nitrate Removal in Sulfur — Limestone Autotrophic Denitrification Fixed-Bed Reactors, 721  
Effects of Surface-Bound Fe<sup>2+</sup> on Nitrate Reduction and Transformation of Iron Oxide(s) in Zero-Valent Iron Systems at Near-Neutral pH, 658  
Impact of Agriculture on Water Quality in the North Carolina Middle Coastal Plain, 1191  
Simultaneous Removal of Phenol and Nitrate in an Anaerobic Bioreactor, 722

## SUBJECT INDEX

### Nitrification

Combined Removal of Carbon and Nitrogen in an Integrated UASB-Jet Loop Reactor Bioreactor System, 669

Comparison of Two Model Concepts for Simulation of Nitrogen Removal at a Full-Scale Biological Nutrient Removal Pilot Plant, 636

Contrasting the Benefits of Primary Clarification versus Prefermentation in Activated Sludge Biological Nutrient Removal Systems, 720

Effect of Cd(II) on Different Bacterial Species Present in a Single Sludge Activated Sludge Process for Carbon and Nutrient Removal, 602

New Process Design Procedure for Dealing with Variable Trickling Filter Effluent Suspended Solids, 684

Nitrogen Transformations during Soil-Aquifer Treatment of Wastewater Effluent — Oxygen Effects in Field Studies, 732

Operational Optimization and Mass Balances in a Two-Stage MBR Treating High Strength Pet Food Wastewater, 691

Role of Particle Size and Ammonium Oxidation in Removal of 17 $\alpha$ -Ethinyl Estradiol in Bioreactors, 757

Simultaneous Removal of Organic Matter and Nitrogen Compounds in Autoaerated Biofilms, 727

### Nitrogen

Impact of Agriculture on Water Quality in the North Carolina Middle Coastal Plain, 1191

Integration of Processes to Treat Wastewater and Source-Separated Urine, 620

Nutrient Removal in a Cold-Region Wastewater Stabilization Pond: Importance of Ammonia Volatilization, 633

Simultaneous Removal of Carbon and Nitrogen from Swine Wastewater using an Immobilized-Cell Reactor, 630

### Noise

Overparameterized Least-Squares Adjustment with Linear Models for Geodetic and Surveying Applications, 1659

### Noise control

Building Integration Solutions, 2053

### Noaqueous phase liquids

Centrifuge Testing of LNAPL Migration and Soil Vapor Extraction for Soil Remediation, 1943

Method for Measuring Air-Immiscible Liquid Partition Coefficients, 599

### Nondestructive tests

Assessing Damage to Airport Pavement Structure due to Complex Gear Loads, 1761

Blind Test Results for Nondestructive Damage Detection in a Steel Frame, 1520

Damage Localization and Finite-Element Model Updating Using Multiresponse NDT Data, 172

Evaluation of Foamed Asphalt Cold In-Place Pavement Recycling Using Nondestructive Techniques, 1770

Fatigue Behavior and Nondestructive Evaluation of Full-Scale FRP Honeycomb Bridge Specimen, 145

Forensic Engineering (2006), 2066

Fundamental Frequency Testing of Reinforced Concrete Beams, 1384

Impact of Temperature Gradient on Modulus of Asphaltic Concrete Layers, 1316

## Nonlinear analysis

In-Service Evaluation of Cable-Stayed Bridges, Overview of Available Methods, and Findings, 175

Investigations on the Static Behavior of Self-Compacting Concrete Under-Reamed Piles, 1305

Nondestructive and Laboratory Evaluation of Damage Gradients in Concrete Structure Exposed to Cryogenic Temperatures, 1368

Nondestructive Dynamic Evaluation of a Concrete Reaction Wall — Numerical and Experimental Studies, 1389

Optimal Inspection Scheduling of Steel Bridges using Nondestructive Testing Techniques, 134

Role of Learning Algorithm in Neural Network-Based Backcalculation of Flexible Pavements, 287

Structural Monitoring and Integrity Assessment of Medieval Towers, 1605

Sudden Failure of a Heavily Loaded Container Pavement, 912

### Nonlinear analysis

Adaptive Modal Combination Procedure for Nonlinear Static Analysis of Building Structures, 1609

Axisymmetric Nonlinear Stability of a Shallow Conical Shell with a Spherical Cap of Arbitrary Variable Shell Thickness, 555

Comparison of Various Procedures for Progressive Collapse Analysis, 1402

Compression Behavior of Nonslender Cylindrical Steel Members with Small and Large-Scale Geometric Imperfections, 1560

Effects of Connection Fractures on Global Behavior of Steel Moment Frames Subjected to Earthquakes, 1447

Efficacy of Hilbert and Wavelet Transforms for Time-Frequency Analysis, 543

Estimating Seismic Demands for Isolation Bearings with Building Overturning Effects, 1548

Finite-Element Modeling of Timber Joints with Punched Metal Plate Fasteners, 1479

Generalized Bouc-Wen Model for Highly Asymmetric Hysteresis, 495

Hyperelasticity Model for Finite-Element Analysis of Natural and High Damping Rubbers in Compression and Shear, 440

Modeling Steel Frame Buildings in Three Dimensions. I: Panel Zone and Plastic Hinge Beam Elements, 470

Modeling Steel Frame Buildings in Three Dimensions. II: Elastofober Beam Element and Examples, 471

Modeling the Impact of Failed Members for Progressive Collapse Analysis of Frame Structures, 1403

New Approach for Seismic Nonlinear Analysis of Inelastic Framed Structures, 535

New Stabilized Finite Element Method Embedded with a Cap Model for the Analysis of Granular Materials, 460

Nonlinear Analysis of Reinforced Concrete Beam — Columns with Bond-Slip, 559

Nonlinear Analytical Solution for Cable Truss, 446

Nonlinear Stiffness Design Optimization of Tall Reinforced Concrete Buildings under Service Loads, 1536

Optimal Instantaneous Unit Hydrograph from Multisensor Data, 1198

Plastic Hinge Integration Methods for Force-Based Beam — Column Elements, 1462

## Nonlinear analysis

- Postbuckling of Moderately Thick Imperfect Rings under External Pressure, 569  
Probabilistic Service Life Assessment and Maintenance Planning of Concrete Structures, 1521  
Progressive Collapse of Structures: Annotated Bibliography and Comparison of Codes and Standards, 1407  
Seismic Design Optimization of Steel Building Frameworks, 1466  
Small-Strain Behavior of Granular Soils. II: Seismic Response Analyses and Model Evaluation, 877  
Stability and Ductility of Thin-Walled Circular Steel Columns under Cyclic Bidirectional Loading, 1599  
Static Equivalency in Progressive Collapse Alternate Path Analysis: Reducing Conservatism While Retaining Structural Integrity, 1401  
Testing Protocol for Short Links in Eccentrically Braced Frames, 1554  
Testing Protocol for Short Links in Eccentrically Braced Frames, 1555  
Three-Dimensional Linear and Simplified Nonlinear Soil Response Methods Based on an Input Wave Field, 46  
Topological Mapping for Tension Structures, 1535
- Nonlinear differential equations**  
Generalized Bouc – Wen Model for Highly Asymmetric Hysteresis, 495  
Postbuckling of Beam Subjected to Intermediate Follower Force, 436
- Nonlinear response**  
Damage and Damage Prediction for Wood Shearwalls Subjected to Simulated Earthquake Loads, 1381  
Data Reduction of Horizontal Load Full-Scale Tests on Bored Concrete Piles and Pile Groups, 847  
Dynamic Behavior of Nonlinear Cable System. IV, 464  
Equivalent Linearization for the Nonstationary Response Analysis of Nonlinear Systems with Random Parameters, 481  
Fully Nonhydrostatic Modeling of Surface Waves, 479  
Generalized Bouc – Wen Model for Highly Asymmetric Hysteresis, 495  
Multiscale Nonlinear Framework for the Long-Term Behavior of Layered Composite Structures, 577  
New Measure for Severity of Near-Source Seismic Ground Motion, 1636  
Nonlinear Response of Double-Wall Cylindrical Shell Vibrations under Random Excitation, 63  
Nonlinear Response of Laminated Cylindrical Shell Panels Subjected to Thermomechanical Loads, 548  
Observations on the Reliability of Alternative Multiple-Mode Pushover Analysis Methods, 1485  
Property Modification Factors for Seismically Isolated Bridges, 140  
Response of Nonstructural Components in Structures with Damping Systems, 1547
- Nonlinear systems**  
Coupled Surge-Heave Motions of a Moored System. I: Model Calibration and Parametric Study, 501  
Coupled Surge-Heave Motions of a Moored System. II: Stochastic Analysis and Simulations, 502  
Modified K-NN Model for Stochastic Streamflow Simulation, 1110  
Optimal Control: Basis for Performance Comparison of Passive and Semiactive Isolation Systems, 504

## 2006 ASCE TRANSACTIONS

### Nonpoint pollution

- Area-Rated Rational Coefficients for Portland Cement Pervious Concrete Pavement, 1098  
Investigation of Boundary Shear Stress and Pollutant Detachment from Impervious Surface during Simulated Urban Runoff, 592  
Runoff Quality Analysis of Urban Catchments with Analytical Probabilistic Models, 1801  
Study of Total Maximum Daily Load and Nonpoint Source Pollution Control Strategies for Reservoir Watershed, 1954  
Uncertainty Analysis for Coupled Waterhed and Water Quality Modeling Systems, 1838  
Watershed Environmental Hydrology Model: Environmental Module and Its Application to a California Watershed, 1099

### Nonstructural elements

- Fragility of Bench-Mounted Equipment Considering Uncertain Parameters, 1527  
Response of Nonstructural Components in Structures with Damping Systems, 1547  
Seismic Design Forces. I: Rigid Nonstructural Components, 1589  
Seismic Design Forces. II: Flexible Nonstructural Components, 1590

### Nonuniform flow

- Flow in Compound Channel with Abrupt Floodplain Contraction, 1026

### North America

- Deployment of Fiber Optic Networks through Underground Sewers in North America, 1737  
Modeling of Lake Ice Characteristics in North America using Climate, Geography, and Lake Bathymetry, 187

### North Carolina

- Evaluating Bioretention Hydrology and Nutrient Removal at Three Field Sites in North Carolina, 1232  
Sediment Transport over Ripples in Oscillatory Flow, 950  
Testing, Analysis, and Evaluation of a GFRP Deck on Steel Girders, 142

### Norway

- Increased Snow Loads and Wind Actions on Existing Buildings: Reliability of the Norwegian Building Stock, 1618

### Notches

- Size Effect on Strength of Quasi-Brittle Structures with Reentrant Corners Symmetrically Loaded in Tension, 558

### Nuclear reactors

- Sustainability and Economics of the Advanced High-Temperature Reactor, 432

### Nuclear wastes

- Thermohydromechanical Modeling of a Full-Scale Tunnel Sealing Clay Bulkhead, 778

### Numerical analysis

- Behavior of an Air Curtain Subjected to Transversal Pressure Variations, 611  
Bond Behavior of Near-Surface Mounted CFRP Laminate Strips under Monotonic and Cyclic Loading, 218

## SUBJECT INDEX

- Condensed Model Identification and Recovery for Structural Damage Assessment, 1638  
Degradation of a Granular Base under a Flexible Pavement: DEM Simulation, 56  
Effects of FRP-Concrete Interface Bond Properties on the Performance of RC Beams Strengthened in Flexure with Externally Bonded FRP Sheets, 1345  
Evaluation of Oxygen Sag Equation for Second-Order Biochemical Oxygen Demand Decay, 766  
Ground Motion Induced by Train Passage, 455  
Influence of Micromaterial Heterogeneity on Strain Localization in Granular Materials, 37  
The Most Degrading Postbuckling Mode of Pin-Jointed Structures, 513  
New Approach to Determine Three-Dimensional Contacts in Blocks System: Penetration Edges Method, 42  
Numerical Analysis of T-Bar Penetration in Soft Clay, 53  
Numerical Calculation of Turbulence Structure in Depth-Varying Unsteady Open-Channel Flows, 999  
Numerical Error in Weighting Function-Based Unsteady Friction Models for Pipe Transients, 1001  
Numerical Model for Reinforced Soil Segmental Walls under Surcharge Loading, 841  
Numerical Simulations of Dynamic Instability of Elastic-Plastic Beams, 461  
Numerical Solution for Laterally Loaded Piles in a Two-Layer Soil Profile, 910  
Shear Banding in Sandstone: Physical and Numerical Studies, 31  
Stability Requirements for Beams in Seismic Steel Moment Frames, 1570  
Systematic Evaluation of One-Dimensional Unsteady Friction Models in Simple Pipelines, 1000  
Thermohydromechanical Modeling of a Full-Scale Tunnel Sealing Clay Bulkhead, 778  
Undrained Bearing Capacity of Square and Rectangular Footings, 27

### Numerical models

- 2D Shallow-Water Model using Unstructured Finite-Volumes Methods, 958  
3D Simulation of Combining Flows in 90° Rectangular Closed Conduits, 954  
Blind Test Results for Nondestructive Damage Detection in a Steel Frame, 1520  
Breaking Antidunes: Cyclic Behavior due to Hysteresis, 993  
Case Study of an S-Shaped Spillway using Physical and Numerical Models, 1021  
Case Study: Refinement of Hydraulic Operation of a Complex CSO Storage/Treatment Facility by Numerical and Physical Modeling, 944  
Chebyshev Finite-Spectral Method for 1D Bousinessq-Type Equations, 1876  
Circulation in Stratified Lakes due to Flood-Induced Turbidity Currents, 754  
Coupled Surge-Heave Motions of a Moored System. I: Model Calibration and Parametric Study, 501  
Dam-Break Wave-Front Celerity, 938  
DEM-FEM Model of Highly Saturated Soil Motion Due to Seepage Force, 1892  
Development and Application of a Phosphorus Model for a Shallow Oxbow Lake, 753
- Development and Validation of a Quasi-Three-Dimensional Coastal Area Morphological Model, 1900  
Diagonal Cartesian Method for the Numerical Simulation of Flow and Suspended Sediment Transport over Complex Boundaries, 1053  
Drag Force on Single Piles in Clay Subjected to Surcharge Loading, 20  
Effect of Vehicle Velocity on the Dynamic Amplification of a Vehicle Crossing a Simply Supported Bridge, 128  
Effects of Local Search Algorithms on Groundwater Remediation Optimization using a Self-Adaptive Hybrid Genetic Algorithm, 278  
Estuarine and Coastal Modeling — Proceedings of the Ninth International Conference, 2064  
Examination of Level of Analysis Accuracy for Curved I-Girder Bridges through Comparisons to Field Data, 120  
Flow in Compound Channel with Abrupt Floodplain Contraction, 1026  
General Validity of Conductivity Means in Unsaturated Flow Models, 1125  
Groundwater Remediation Design using Multiscale Genetic Algorithms, 1837  
Hydraulic Elements Chart for Pipe Flow using New Definition of Hydraulic Radius, 1030  
Hydrodynamic Behavior of Asymmetric Oscillatory Boundary Layers at Low Reynolds Numbers, 1040  
Improved Compartmental Modeling and Application to Three-Phase Contaminant Transport in Unsaturated Porous Media, 606  
Integrated Hydrodynamic and Water Quality Modeling System to Support Nutrient Total Maximum Daily Load Development for Wissahickon Creek, Pennsylvania, 644  
Lessons Learned for Ground Movements and Soil Stabilization from the Boston Central Artery, 868  
Material Spatial Variability and Slope Stability for Weak Rock Masses, 796  
Method of Fundamental Solutions for Three-Dimensional Stokes Flow in Exterior Field, 467  
Nondestructive Dynamic Evaluation of a Concrete Reaction Wall — Numerical and Experimental Studies, 1389  
Novel Approach to Integration of Numerical Modeling and Field Observations for Deep Excavations, 872  
Numerical Model for Reinforced Soil Segmental Walls under Surcharge Loading, 841  
Numerical Model for the Analysis of Unbonded Prestressed Members, 1442  
Numerical Model of Saltwater Transport toward a Pumping Well, 1103  
Numerical Modeling and Analysis of Solute Velocity and Macrodispersion for Linearly and Nonlinearly Sorbing Solutes in a Single Fracture with Matrix Diffusion, 1104  
Numerical Modeling of Thaw Penetration in Frozen Ground Subject to Low-Intensity Infrared Heating, 180  
Numerical Modeling of Wave-Induced Liquefaction around Pipelines, 1881  
Numerical Simulation of Depleted Uranium Transport in a Desert Environment using a Distributed Parameter Watershed Model, 1960

## Numerical models

## Numerical models

- Numerical Simulation of High-Strength Steel Box-Shaped Columns Failing in Local and Overall Buckling Modes, 1492  
Numerical Simulation of Obstructed Round Buoyant Jets in a Static Uniform Ambient, 974  
Numerical Simulation of Solitary Waves using Velocity-Vorticity Formulation of Navier-Stokes Equations, 456  
One-Dimensional Model of Shallow Water Surface Waves Generated by Landslides, 977  
Performance of Parallel Implementations of an Explicit Finite-Volume Shallow-Water Model, 255  
Physical and Numerical Comparison of Flow over Ogee Spillway in the Presence of Tailwater, 1068  
Prediction of Soil-Water Characteristic Curve using Genetic Programming, 840  
Simplified Numerical Method to Evaluate the Mechanical Strength of Cast Iron Water Pipes, 1143  
Static Strength of Cracked Square Hollow Section T Joints under Axial Loads. II: Numerical, 1476
- Nutrient loads**  
Evaluating Bioretention Hydrology and Nutrient Removal at Three Field Sites in North Carolina, 1232  
Integrated Hydrodynamic and Water Quality Modeling System to Support Nutrient Total Maximum Daily Load Development for Wissahickon Creek, Pennsylvania, 644  
Surface Analysis of Chesapeake Bay Water Quality Response to Different Nutrient and Sediment Loads, 625
- Nutrients**  
Activated Sludge Process Modification for Sludge Yield Reduction using Pulp and Paper Wastewater, 715  
Effect of Cd(II) on Different Bacterial Species Present in a Single Sludge Activated Sludge Process for Carbon and Nutrient Removal, 602  
Effects of Nutrient Source and Supply on Crude Oil Biodegradation in Continuous-Flow Beach Microcosms, 591  
Impact of Agriculture on Water Quality in the North Carolina Middle Coastal Plain, 1191  
Integration of Processes to Treat Wastewater and Source-Separated Urine, 620  
Nutrient Removal in a Cold-Region Wastewater Stabilization Pond: Importance of Ammonia Volatilization, 633  
Tracer Studies in Laboratory Beach Simulating Tidal Influences, 668
- Occupational safety**  
Analysis of Construction Worker Injuries That Do Not Result in Lost Time, 320  
Comparative Injury and Fatality Risk Analysis of Building Trades, 342  
Owner's Role in Construction Safety, 304  
Owner's Role in Construction Safety: Guidance Model, 305  
Particulate Matter from Stone Crushing Industry: Size Distribution and Health Effects, 628  
Physical Risk Factors and Controls for Musculoskeletal Disorders in Construction Trades, 393  
Safety Hazard Identification on Construction Projects, 308  
Scheduling-Based Risk Estimation and Safety Planning for Construction Projects, 351

## 2006 ASCE TRANSACTIONS

- Validation of Shoring Made of HDPE Pipe or CGS Pipe Normally Used for Culverts and Sewers, 1974  
**Ocean bottom**  
Modeling of Seabed Interaction of Oceanographic Moorings in the Frequency Domain, 1898  
**Ocean engineering**  
Numerical and Experimental Study on Ship Wash Including Wave-Breaking on Shore, 1889  
**Ocean waves**  
Parameter Variation and Part-Load Efficiencies of Wave Energy Conversion, 421  
**Oceanography**  
Modeling of Seabed Interaction of Oceanographic Moorings in the Frequency Domain, 1898  
**Oceans**  
Marine Wastewater Discharges from Multiport Diffusers. IV: Stratified Flowing Water, 972  
**Odors**  
Commercial Odor-Reducing Agents for Minimizing the Odor Potential of Asphalt Binders, 645  
Electronic Nose — Membrane Interface Probe for Geoenvironmental Site Characterization, 882  
Modeling Ventilation Phenomenon in Sanitary Sewer Systems: A System Theoretic Approach, 1008  
Statistical Modeling to Forecast Odor Levels of Biosolids Applied to Reuse Sites, 652
- Offshore construction**  
Considerations for Storm-Water Outfalls off Exposed Coasts, 1233
- Offshore pipelines**  
Improved Analysis Method for Wave-Induced Pipeline Stability on Sandy Seabed, 1727
- Offshore structures**  
Challenges in Predicting Power Output from Offshore Wind Farms, 430  
Design Equation for Offshore Overlap Tubular K-Joints under In-Plane Bending, 1545  
Discriminating Modes of Shoreline Response to Offshore-Detached Structures, 1873  
Finite-Element Computation of Wave-Structure Interaction between Steep Stokes Waves and Vertical Cylinders, 1886  
Fluid-Soil-Structure Interaction in Liquefaction around a Cyclically Moving Cylinder, 1882  
The Gulf of Mexico Decommissioning Market, 369  
Liquefaction Phenomena underneath Marine Gravity Structures Subjected to Wave Loads, 1885  
Numerical Modeling of Wave-Induced Liquefaction around Pipelines, 1881  
Offshore Decommissioning Cost Estimation in the Gulf of Mexico, 313  
Offshore Technology in Civil Engineering: Hall of Fame Papers from the Early Years, 2077  
Physics of Liquefaction Phenomena around Marine Structures, 1877
- Ohio**  
Accelerating the Construction of a Highway Bridge in Ohio, 1980  
Geometry Lesson, 2012  
Screening Level Risk Assessment of Heavy Metal Contamination in Cleveland Area Commons, 627

## SUBJECT INDEX

### Oil spills

Achievement of 100% Removal of Oil from Feathers Employing Magnetic Particle Technology, 661

Comparative Absorption of Crude Oil from Fresh and Marine Water using Recycled Rubber, 723

Developing a Web-Based System for Large-Scale Environmental Hydraulics Problems with Application to Oil Spill Modeling, 264

Effects of Nutrient Source and Supply on Crude Oil Biodegradation in Continuous-Flow Beach Microcosms, 591

Evaluation of Mixing Energy in Laboratory Flasks used for Dispersant Effectiveness Testing, 593

Tracer Studies in Laboratory Beach Simulating Tidal Influences, 668

### Oils

Oil and Grease Measurement in Highway Runoff — Sampling Time and Event Mean Concentrations, 629

Transport of Edible Oil Emulsions in Clayey Sands: One-Dimensional Column Results and Model Development, 1095

Transport of Edible Oil Emulsions in Clayey Sands: 3D Sandbox Results and Model Validation, 1096

Vermiculite Filtration for Removal of Oil from Water, 1957

### Oklahoma

Catastrophe-Induced Destruction and Reconstruction, 1924

Lessons Learned from an Emergency Bridge Replacement Project, 321

Rapid Bridge Replacement: Processes, Techniques, and Needs for Improvements, 400

### Open channel flow

Asymmetric Flow in Symmetric Supercritical Expansions, 953

Classifying River Waves by the Saint Venant Equations Decoupled in the Laplacian Frequency Domain, 998

Flow Resistance and Momentum Flux in Compound Open Channels, 1059

Hydraulic Elements Chart for Pipe Flow using New Definition of Hydraulic Radius, 1030

Improved Simulation of Flow Regime Transition in Sewers: Two-Component Pressure Approach, 987

Kinematic Wave Parameters for Trapezoidal and Rectangular Channels, 1088

Lodging Velocity for an Emergent Aquatic Plant in Open Channels, 1032

Minimum Specific Energy and Critical Flow Conditions in Open Channels, 1221

Multilayer Averaged and Moment Equations for One-Dimensional Open-Channel Flows, 1013

New Method for Estimation of Discharge, 1035

Numerical Calculation of Turbulence Structure in Depth-Varying Unsteady Open-Channel Flows, 999

Optimal Control of Open-Channel Flow using Adjoint Sensitivity Analysis, 1055

Parallel Walls as an Abutment Scour Countermeasure, 982

Particle Image Velocity Measurements of Undular and Hydraulic Jumps, 1060

Performance of Slit Weir, 1029

Salt River Project Canal Automation Pilot Project: Simulation Tests, 1180

## Optimization

Scale Independent Linear Behavior of Alluvial Channel Flow, 1002

VOF Model for Simulation of a Free Overfall in Trapezoidal Channels, 1212

### Open channels

Analytical Solution of the Burgers Equation for Simulating Transitory Waves in Conveyance Channels, 951

Flow in Compound Channel with Abrupt Floodplain Contraction, 1026

Flow Resistance and Momentum Flux in Compound Open Channels, 1059

Large-Eddy Simulation of Turbulent Flow over a Fixed Two-Dimensional Dune, 996

Optimal Design of Open Channel Section Incorporating Critical Flow Condition, 1223

Scour Countermeasures for Wing-Wall Abutments, 988

Scour Downstream of an Apron Due to Submerged Horizontal Jets, 957

### Openings

Lateral Stiffness of Shear Walls with Openings, 1621

### Operating costs

Contractual Management in PPP Projects: Evaluation of Legal versus Relational Contracting for Service Delivery, 1415

Novel Cellular Automata Approach to Optimal Water Distribution Network Design, 250

### Optimization

Adaptive Optimization and Systematic Probing of Infrastructure System Maintenance Policies under Model Uncertainty, 1156

Alternative Decision Making in Water Distribution Network with NSGA-II, 1813

Alternative Formulations for Structural Optimization: An Evaluation Using Frames, 1624

Assessing Performance under Regulatory Evolution: A European Transit System Perspective, 1798

Calibrating Holistic Water Resources — Economic Models, 1844

Can Reservoir Storage Be Uneconomically Large?, 1854

Complex Edge Stiffeners for Thin-Walled Members, 1459

Computerized System for Efficient Delivery of Infrastructure Maintenance/Repair Programs, 290

Contamination Source Identification in Water Systems: A Hybrid Model Trees-Linear Programming Scheme, 1828

Contingency Planning in Project Selection using Multi-objective Optimization and Chance Constraints, 1148

Damage Identification Based on Dead Load Redistribution: Methodology, 1562

Derivation of Transition Probability Matrices for Pavement Deterioration Modeling, 1678

Derived Operating Rules for Allocating Recharges and Withdrawals among Unconnected Aquifers, 1803

Derived Willingness-to-Pay for Household Water Use with Price and Probabilistic Supply, 1845

Developing Integrated Schedules for Urban Rail and Feeder Bus Operation, 1788

Development of an Optimization Methodology for Adaptive Traffic Sign Control at Diamond Interchanges., 1732

## Optimization

- Development of Optimal and Physically Realizable Unit Hydrograph, 1134  
Distributed Hybrid Genetic Algorithms for Structural Optimization on a PC Cluster, 1625  
Economic-Based Optimization of Panama Canal System Operations, 1852  
Elastic Constants Identification of Composite Materials using Single Angle-Ply Laminate, 560  
Evaluation of Traditional and Nontraditional Optimization Techniques for Determining Well Parameters from Step-Drawdown Test Data, 1135  
Flow Depletion Induced by Pumping Well from Finite Length of Stream, 1222  
Groundwater Remediation Design using Multiscale Genetic Algorithms, 1837  
Highway Route Optimization Based on Accessibility, Proximity, and Land-Use Changes, 1708  
Hydraulic Optimization of Transient Protection Devices using GA and PSO Approaches, 1805  
Identification of Groundwater Pollution Sources using GA-Based Linked Simulation Optimization Model, 1081  
Improving Full-Scale Transmission Tower Design through Topology and Shape Optimization, 1518  
Infrastructure Development and Expansion under Uncertainty: A Risk-Preference-Based Lattice Approach, 350  
Integrated Optimization of Control System for Smart Cylindrical Shells using Modified GA, 66  
Internal Forces for Statically Indeterminate Structures having Different Moduli in Tension and Compression, 508  
Linear Programming Approach to Optimize Strategic Investment in the Construction Workforce, 402  
MACROS: Multiobjective Automated Construction Resource Optimization System, 1252  
Markov-Based Optimization Model for Building Facilities Management, 407  
Minimizing Construction-Related Hazards in Airport Expansion Projects, 344  
Mixed-Integer Approach for Obtaining Unique Solutions in Source Inversion of Water Networks, 1826  
Model for Three-Dimensional Highway Alignment, 1764  
Multiobjective Plan Selection Optimization for Traffic Responsive Control, 1702  
Nonlinear Stiffness Design Optimization of Tall Reinforced Concrete Buildings under Service Loads, 1536  
Optimal Control of Open-Channel Flow using Adjoint Sensitivity Analysis, 1055  
Optimal Design of a Compacted Soil Liner Containing SORptive Amendments, 686  
Optimal Instantaneous Unit Hydrograph from Multistorm Data, 1198  
Optimal Nonlocal and Asymmetric Structural Damping using Regenerative Force Actuation Networks, 532  
Optimal Planning and Scheduling for Repetitive Construction Projects, 1238  
Optimal Reservoir Operation for Irrigation of Multiple Crops using Genetic Algorithms, 1178  
Optimal Reservoir Operations for Irrigation using a Three Spatial Scales Approach, 1179  
Optimal Scheduling of Replacement and Rehabilitation of Water Distribution Systems, 1155

## 2006 ASCE TRANSACTIONS

- Optimal Seismic Design Considering Risk Attitude, Societal Tolerable Risk Level, and Life Quality Criterion, 1639  
Optimal Siting of Fire Stations using GIS and ANT Algorithm, 286  
Optimal Transit Route Network Design Problem with Variable Transit Demand: Genetic Algorithm Approach, 1667  
Optimization of an Unstructured First-Order Kinetics Model of Cyclically Operated Bioreactors, 649  
Optimization of Investments in Natural Gas Distribution Networks, 425  
Optimization of Water Distribution Networks using Integer Linear Programming, 981  
Optimizing Airport Construction Site Layouts to Minimize Wildlife Hazards, 1257  
Optimizing Bridge Network Maintenance Management under Uncertainty with Conflicting Criteria: Life-Cycle Maintenance, Failure, and User Costs, 1620  
Parameter Estimation for the Nonlinear Muskingum Model using the BFGS Technique, 1217  
Parameter Optimization and Sensitivity Analysis for Disturbed State Constitutive Model, 19  
Particle Swarm Optimization for Preemptive Scheduling under Break and Resource-Constraints, 314  
Particle Swarm Optimization-Supported Simulation for Construction Operations, 413  
Performance-Based Optimization of Land and Water Resources within Irrigation Schemes. I: Method, 1201  
Performance-Based Optimization of Land and Water Resources within Irrigation Schemes. II: Application, 1202  
Permutation-Based Particle Swarm Optimization for Resource-Constrained Project Scheduling, 259  
Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Single Maintenance Type, 1537  
Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Combination of Maintenance Types, 1619  
Reliability-Based Optimization of Fiber-Reinforced Polymer Composite Bridge Deck Panels, 1626  
Seepage to a Drainage Ditch and Optimization of Its Shape, 1234  
Seismic Design Optimization of Steel Building Frameworks, 1466  
Sensor Placement in Municipal Water Networks with Temporal Integer Programming Models, 1823  
Sensor Placement in Water Networks: A Stochastic Programming Approach, 1820  
Simulated Annealing - Genetic Algorithm for Transit Network Optimization, 251  
Stochastic Dynamic Programming with Risk Consideration for Transbasin Diversion System, 1812  
Stochastic Optimization of the Highland Lakes System in Texas, 1807  
Structural Damage Detection from Wavelet Coefficient Sensitivity with Model Errors, 547  
Structural Weight Optimization of Frames Using Tabu Search. I: Optimization Procedure, 1622  
Structural Weight Optimization of Frames Using Tabu Search. II: Evaluation and Seismic Performance, 1623  
Strut-and-Tie Design Methodology for Three-Dimensional Reinforced Concrete Structures, 1531

## SUBJECT INDEX

- System Identification and Damage Detection of a Pre-stressed Concrete Beam, 1606  
System-Wide Data Quality Control of Inductance Loop Data using Nonlinear Optimization, 263  
Use of Artificial Neural Networks in the Prediction of Liquefaction Resistance of Sands, 917  
Visualizing Search and Solution Spaces in the Optimum Design of Biaxial Columns, 254
- Optimization models**  
Contaminant Warning in Water Networks: General Mixed-Integer Linear Models for Sensor Location Design, 1824  
Determining Attribute Weights in a CBR Model for Early Cost Prediction of Structural Systems, 396  
Developing a Resource Supply Chain Planning System for Construction Projects, 327  
Developing Combined Genetic Algorithm — Hill-Climbing Optimization Method for Area Traffic Control, 1736  
Economic Optimization of Conjunctive Use of Surface Water and Groundwater at the Basin Scale, 1848  
Effects of Local Search Algorithms on Groundwater Remediation Optimization using a Self-Adaptive Hybrid Genetic Algorithm, 278  
Irrigation Scheduling with Travel Times, 1188  
Locating Monitors in Water Distribution Systems: Red Team-Blue Team Exercise, 1832  
Optimal Design in the Presence of Modeling Uncertainties, 77  
Optimal Design of Open Channel Section Incorporating Critical Flow Condition, 1223  
Optimal Design of Redundant Water Distribution Networks using a Cluster of Workstations, 1840  
Optimal Design with Probabilistic Objective and Constraints, 445  
Optimal Irrigation Planning under Water Scarcity, 1189  
Optimization of Frequency Distribution of Storm-Water Discharges for Coastal Ecosystem Restoration, 1835  
Sensor Placement in Municipal Water Networks with Temporal Integer Programming Models, 1823  
Simple Rule-Based Algorithm for Optimizing Volatile Fatty Acids Production in Primary Sludge Fermentation Schemes, 747  
Two-Level Integrated Optimization System for Planning of Emergency Evacuation, 1751
- Orbits**  
New Approach to Mission Design Based on the Fundamental Equations of Motion, 65
- Oregon**  
Multiobjective Optimal Waste Load Allocation Models for Rivers using Nondominated Sorting Genetic Algorithm-II, 1814  
Short- and Long-Term Effects of Element Costs and Failure Costs in *Ponitis*, 166
- Organic carbon**  
Ozonation of 2-Chlorophenol in Aqueous Solutions with a Packed Contactor, 775
- Organic chemicals**  
Bioremediation of Hazardous Wastes — A Review, 1946  
Optimal Design of a Compacted Soil Liner Containing Sorptive Amendments, 686

## Oscillations

- Organic Hazardous Substances in Graywater from Swedish Households, 700
- Organic compounds**  
Adsorption and Desorption of Volatile Organic Compounds in Fluidized Bed, 648  
Coupled Mechanical and Chemical Behavior of Bentonite Engineered with a Controlled Organic Phase, 907  
Gasification of Aromatic Volatile Organic Compounds Generated from Petroleum and Refinery Industries with Syngas Recycling, 1956  
Microcosm Approach to Study Transport of Polychlorinated Biphenyls in Sediment, 676
- Organic loads**  
Microbial Adaptability to Organic Loading Changes in an Enhanced Biological Phosphorus Removal Process, 701  
Simultaneous Removal of Organic Matter and Nitrogen Compounds in Autoaerated Biofilms, 727
- Organic matter**  
Attachment of Fecal Indicator Bacteria to Particles in the Neuse River Estuary, N.C., 736  
Character of Organic Matter in Soil-Aquifer Treatment Systems, 748  
Column Study Simulating In Situ Bioremediation of Perchlorate using Acetate as an Organic Substrate, 1950  
Comparison of Methods for Determining Specific Surface Area of Soils, 865  
Evaluation of a Sludge Yield and Phosphorus Removal in a Cannibal Solids Reduction Process, 735  
Evaluation of Oxygen Sag Equation for Second-Order Biochemical Oxygen Demand Decay, 766  
Modeling Substrate Interactions during Aerobic Biodegradation of Mixtures of Vinyl Chloride and Ethene, 705  
Removal of Immiscible Contaminants from Sandy Soils Monitored by Means of Dielectric Measurements, 704
- Organizations**  
Benchmarking Initiatives in the Construction Industry: Lessons Learned and Improvement Opportunities, 1255  
Boardrooms of Energy Firms in the Post-Enron Era, 424  
Emotional Intelligence and Leadership Behavior in Construction Executives, 1251  
Influence of the National Performance Review on Supervisors in Government Organizations, 1920  
The Limitations of Planning: The Importance of Learning, 382  
Organizational Distortions and Failures: A Method to Expose Them, 1408  
Relationship between Governance Structure and Financial Performance in Construction, 1239  
Turbocharged Organizational Change through High-Octane Management Training, 1916
- Orthotropism**  
Measurement of Truck Axle Weights by Instrumenting Longitudinal Ribs of Orthotropic Bridge, 155
- Oscillations**  
Impact of Limiters on Accuracy of High-Resolution Flow and Transport Models, 443

## Oscillations

Steady-State Diffusion — Advection by Exponential Finite Elements, 55

## Oscillatory flow

Coupling of U-Tube and Shear Layer Oscillations in an Interconnected Flow Compartment, 511

Detection of Partial Blockage in Single Pipelines, 952

Hydrodynamic Behavior of Asymmetric Oscillatory Boundary Layers at Low Reynolds Numbers, 1040

Sediment Transport over Ripples in Oscillatory Flow, 950

## Osmosis

Membrane Behavior of Two Backfills from Field-Constructed Soil-Bentonite Cutoff Walls, 892

## Outfall sewers

Considerations for Storm-Water Outfalls off Exposed Coasts, 1233

Marine Wastewater Discharges from Multiport Diffusers. III: Stratified Stationary Water, 971

Marine Wastewater Discharges from Multiport Diffusers. IV: Stratified Flowing Water, 972

## Outflows

Total Friction Loss along Multiple Outlets Pipes with Open End, 1167

## Overconsolidated soils

Pore Pressure Response Following Undrained uCPT Soundings in a Dilating Soil, 915

## Overflow

Bridge Blockage and Overbank Flow Simulations using HEC-RAS in the Keelung River during the 2001 Nari Typhoon, 963

Experimental Study and 3D Numerical Simulations for a Free-Overflow Spillway, 1022

Prioritizing Sanitary Sewers for Rehabilitation using Least-Cost Classifiers, 1154

Sediment Transport in River Models with Overbank Flows, 939

## Overland flow

Analytical Solutions of Nonlinear Kinematic Wave Model, 1126

Efficient Solution of the Coupled One-Dimensional Surface — Two-Dimensional Subsurface Flow during Furrow Irrigation Advance, 1206

Electromagnetic Wave Surface Velocimetry, 946

Impact of Limiters on Accuracy of High-Resolution Flow and Transport Models, 443

Investigation of Boundary Shear Stress and Pollutant Detachment from Impervious Surface during Simulated Urban Storm Runoff, 592

Maximum Fluid Forces in the Tsunami Runup Zone, 1903

## Overloads

New Methodology: Permit Checking of Vehicular Overloads, 131

## Overpasses

Fourway: Graphical Tool for Performance-Based Earthquake Engineering, 1564

## Owners

Examining the Business Impact of Owner Commitment to Sustainability, 326

Owner's Role in Construction Safety, 304

Owner's Role in Construction Safety: Guidance Model, 305

## 2006 ASCE TRANSACTIONS

Pipelines 2006 — Service to the Owner, 2080

Risk Management: Lessons from Six Continents, 1244

## Oxidation

Characterization of Methane Flux and Oxidation at a Solid Waste Landfill, 607

Chromium Redox Chemistry in Drinking Water Systems, 694

Electrochemical Oxidation and Ozonation for Textile Wastewater Reuse, 619

Electrolytic Treatment of Azo Dye Wastewaters: Impact of Matrix Chloride Content, 656

Enhancement of Anaerobic Digestion of Excess Municipal Sludge with Thermal and/or Oxidative Treatment, 670

Evaluating Ozone as a Remedial Treatment for Removing RDX from Unsaturated Soils, 763

Evaluation of Water Reuse Technologies for the Textile Industry, 618

Fenton and Electro-Fenton Methods for Oxidation of H-Acid and Reactive Black 5, 624

Impact of Inherent Factors on the Radioolytic Degradation of Biorefractory Contaminants, 755

MS2 Inactivation by Chloride-Assisted Electrochemical Disinfection, 584

Nitrogen Transformations during Soil-Aquifer Treatment of Wastewater Effluent — Oxygen Effects in Field Studies, 732

Oxidation of Methyl Tert-Butyl Ether in Aqueous Solution by an Ozone/UV Process, 743

Oxidative and Reductive Degradation of Mixed Contaminants by Bifunctional Aluminum, 1944

Role of Particle Size and Ammonium Oxidation in Removal of 17 $\alpha$ -Ethynodiol in Bioreactors, 757

Sulfur Impregnation on Activated Carbon Fibers through H<sub>2</sub>S Oxidation for Vapor Phase Mercury Removal, 615

Treating Soil PCP at Optimal Conditions using Heme and Peroxide, 678

Treatment of Contaminated Soils and Groundwater using ISCO, 1939

Zirconia-Supported Copper Oxide — A Catalyst for Removal of Vehicular Exhaust Gas Pollutants, 707

## Oxygen

Evaluation of Oxygen Sag Equation for Second-Order Biochemical Oxygen Demand Decay, 766

Nitrogen Transformations during Soil-Aquifer Treatment of Wastewater Effluent — Oxygen Effects in Field Studies, 732

Recent Progress in the Modeling of Corrosion of Structural Steel Immersed in Seawaters, 1152

Soil Stabilization using Basic Oxygen Steel Slag Fines, 1285

## Oxygen demand

Anaerobic Degradability: Effect of Particulate COD, 637

Contrasting the Benefits of Primary Clarification versus Prefermentation in Activated Sludge Biological Nutrient Removal Systems, 720

New Process Design Procedure for Dealing with Variable Trickling Filter Effluent Suspended Solids, 684

## Oxygen transfer

Air/Water Oxygen Transfer in a Biological Aerated Filter, 603

## SUBJECT INDEX

- Simultaneous Removal of Organic Matter and Nitrogen Compounds in Autoaerated Biofilms, 727
- Ozone**
- Advanced Oxidation for Treatment of Aqueous Extract from EDTA Extraction of Pb and Zn Contaminated Soil, 740
- Effect of Ozone on Filamentous Bulking in a Laboratory Scale Activated Sludge Reactor using Respirometry and INT-Dehydrogenase Activity, 713
- Electrochemical Oxidation and Ozonation for Textile Wastewater Reuse, 619
- Ozonization**
- Evaluation of Decolorization, Mineralization, and Toxicity Reduction of an Azo Dye C.I. Reactive Black 5 in a Countercurrent Bubble Column by Ozone, 1940
- Ozonation of 2-Chlorophenol in Aqueous Solutions with a Packed Contactor, 775
- Pakistan**
- A Cautionary Tale, 1995
- Panama Canal**
- Economic-Based Optimization of Panama Canal System Operations, 1852
- Panels**
- Cellular Automata Model for Predicting the Failure Pattern of Laterally Loaded Masonry Wall Panels, 276
- Fatigue Behavior of a Steel-Free FRP — Concrete Modular Bridge Deck System, 150
- Hysteretic Model of Stiffened Shear Panel Dampers, 1486
- Nonlinear Response of Laminated Cylindrical Shell Panels Subjected to Thermomechanical Loads, 548
- Performance of Wood Shear Walls Sheathed with FRP-Reinforced OSB Panels, 1453
- Racking Performance of Structural Insulated Panels, 1617
- Seismic Behavior of Sheathed Cold-Formed Structures: Physical Tests, 1495
- Static and Cyclic Racking Performance of Autoclaved Aerated Concrete Cladding Panels, 86
- Structural Insulated Panels: Impact on the Residential Construction Process, 366
- Thermomechanical Postbuckling Analysis of Cross-Ply Laminated Cylindrical Shell Panels, 448
- Paper mills**
- Activated Sludge Process Modification for Sludge Yield Reduction using Pulp and Paper Wastewater, 715
- Parameters**
- Aquifer Diffusivity Estimation from Response to Stream Stage Variation, 1100
- Damage Localization and Finite-Element Model Updating Using Multiresponse NDT Data, 172
- Determining Equivalent Linear Parameters for Use in a Capacity Spectrum Method of Analysis, 1445
- Distributions of Wave Steepness and Surf Parameter, 1855
- DSC Model for Soil and Interface Including Liquefaction and Prediction of Centrifuge Test, 799
- Dynamic Response of Closed-Loop System with Uncertain Parameters using Interval Finite-Element Method, 520
- Effect of Convergence on Nonlinear Flow in Porous Media, 973
- Particle size
- Equivalent Linearization for the Nonstationary Response Analysis of Nonlinear Systems with Random Parameters, 481
- Evaluation of Traditional and Nontraditional Optimization Techniques for Determining Well Parameters from Step-Drawdown Test Data, 1135
- Fate and Modeling of Pentachlorophenol Degradation in a Laboratory-Scale Anaerobic Sludge Digester, 689
- Force Identification Based on Sensitivity in Time Domain, 544
- Fragility of Bench-Mounted Equipment Considering Uncertain Parameters, 1527
- Kinematic Wave Parameters for Trapezoidal and Rectangular Channels, 1088
- Local Rotations in Borehole Breakouts — Observed and Modeled Stress Field Rotations and Their Implications for the Petroleum Industry, 52
- Movement of Finite Amplitude Sediment Accumulations, 1003
- New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. II: Applications, 572
- Numerical Modeling and Analysis of Solute Velocity and Macrodispersion for Linearly and Nonlinearly Sorbing Solutes in a Single Fracture with Matrix Diffusion, 1104
- Optimal Instantaneous Unit Hydrograph from Multistorm Data, 1198
- Parameter Estimation for the Nonlinear Muskingum Model using the BFGS Technique, 1217
- Parameter Optimization and Sensitivity Analysis for Disturbed State Constitutive Model, 19
- Parameter Variation and Part-Load Efficiencies of Wave Energy Conversion, 421
- Parametric Study of One-Dimensional Solute Transport in Deformable Porous Media, 870
- Soil — Nail Pullout Interaction in Loose Fill Materials, 36
- Stepwise Parameter Estimations in a Time-Variant Similarity Transformation, 1660
- Structural Response of Elements Combining Ultra-high-Performance Fiber-Reinforced Concretes and Reinforced Concrete, 1615
- System Identification of Partially Restrained Composite Plates using Measured Natural Frequencies, 521
- Three-Parameter Model for Debonding of FRP Plate from Concrete Substrate, 485
- Transition from Ripples to Dunes, 1063
- Unified Sand Model Based on the Critical State and Generalized Plasticity, 580
- Validation of the Hydrological Processes in a Hydrological Model, 1117
- Watershed Surface and Subsurface Spatial Intraflows Model, 1071
- Parking facilities**
- Determining the Desired Amount of Parking using Game Theory, 1778
- Discrete Choice Model for Defining a Parking-Fee Policy on Island of Ortigia, Siracusa, 1789
- Real Options by Spreadsheet: Parking Garage Case Example, 1147
- Particle size**
- Analytic Solution on Critical Suspended Particle Size and Minimum Collection Efficiency in Deep Bed Filtration, 741

## Particle size

- Comparative Absorption of Crude Oil from Fresh and Marine Water using Recycled Rubber, 723  
Experimental Data and Theoretical Analysis of Particle Removal Efficiency in a Novel Hydraulic Separation Unit, 733  
Formulas for Sediment Porosity and Settling Velocity, 1016  
Lightweight Shotcrete Canoe: Use of Viscosity Modifying Admixture and Acetone as Artificial Paste, 1300

## Particle size distribution

- Dynamic Characteristics of Particle Size Distribution in Highway Runoff: Implications for Settling Tank Design, 695  
Laboratory Experiments on Frazil-Size Characteristics in a Counterrotating Flume, 941  
Particulate Matter from Stone Crushing Industry: Size Distribution and Health Effects, 628

## Particles

- Attachment of Fecal Indicator Bacteria to Particles in the Neuse River Estuary, N.C., 736  
Impact of Particle Aggregated Microbes on UV Disinfection. II: Proper Absorbance Measurement for UV Fluence, 667  
Laboratory Measurements of Bed Load Sediment Transport Dynamics, 1875  
Method of Fundamental Solutions for Three-Dimensional Stokes Flow in Exterior Field, 467  
Particle Shape Effects on Packing Density, Stiffness, and Strength: Natural and Crushed Sands, 832  
Particle Swarm Optimization-Supported Simulation for Construction Operations, 413  
Removal of Inorganic Mercury from Polluted Water using Structured Nanoparticles, 621  
Removal of Toluene Vapor with Dispersed Activated Carbon, 622  
The Role of Bioflocculation on Suspended Solids and Particulate COD Removal in the Trickling Filter Process, 655  
Total PM Emission Factors for Steel Grit Used in Dry Abrasive Blasting, 768

## Partnerships

- Anatomy of a Successful Partnering Program on a Megaproject, 1915  
Factor Analysis of Public Clients' Best-Value Objectives in Public—Privately Partnered Infrastructure Projects, 383  
Model for Financial Renegotiation in Public-Private Partnership Projects and Its Policy Implications: Game Theoretic View, 355  
Partnering Mechanism in Construction: An Empirical Study on the Chinese Construction Industry, 310  
Public Clients' Best Value Perspectives of Public Private Partnerships in Infrastructure Development, 298

## Passive control

- Optimal Vibration Absorber with Nonlinear Viscous Power Law Damping and White Noise Excitation, 439

## Passive pressure

- Cyclic Lateral Load Behavior of a Pile Cap and Backfill, 883  
Passive Earth Pressure Mobilization during Cyclic Loading, 884

## 2006 ASCE TRANSACTIONS

## Pavement design

- Calibrated Models of Deicing Agent Solids, Pavement Texture, and Specific Conductivity of Highway Runoff, 761  
Impact of Temperature Gradient on Modulus of Asphaltic Concrete Layers, 1316  
Repeated Measurement Data Analysis in Pavement Deterioration Modeling, 1153  
Statistical Mixed Effects Models for Evaluation and Prediction of Accelerated Pavement Testing Results, 1748

Statistical Modeling of User Perceptions of Infrastructure Condition: Application to the Case of Highway Roughness, 1677

Traffic Data Collection Requirements for Reliability in Pavement Design, 1688

Use of Superpave Gyroratory Compaction Data for Rutting Prediction, 1744

Utilizing Clustering Techniques in Estimating Traffic Data Input for Pavement Design, 1759

Viscoelastic Modeling and Field Validation of Flexible Pavements, 452

## Pavement management

- Comparison of Modeling and Measurement Accuracy of Road Condition Data, 1742  
Derivation of Transition Probability Matrices for Pavement Deterioration Modeling, 1678  
Determination of Required Falling Weight Deflectometer Testing Frequency for Pavement Structural Evaluation at the Network Level, 1671  
Iterative Linear Approach for Nonlinear Nonhomogeneous Stochastic Pavement Management Models, 1689  
Model to Predict Pavement Temperature Profile: Development and Validation, 1679

## Pavements

- Airfield and Highway Pavement: Meeting Today's Challenges with Emerging Technologies, 2047  
Applying Method of Moments to Model Reliability of Pavements Infrastructure, 1706  
Area-Rated Rational Coefficients for Portland Cement Pervious Concrete Pavement, 1098  
Assessing Damage to Airport Pavement Structure due to Complex Gear Loads, 1761  
Cold Regions Engineering 2006 — Current Practices in Cold Regions Engineering, 2056  
Correlation of Aggregate Test Parameters to Hot Mix Asphalt Pavement Performance in Hawaii, 1672  
Ecofriendly Concrete with High Volume of Lagoon Ash, 1310  
Estimation of Pavement Performance Deterioration using Bayesian Approach, 1144  
Evaluation of Foamed Asphalt Cold In-Place Pavement Recycling Using Nondestructive Techniques, 1770  
Factors Affecting Portable Falling Weight Deflectometer Measurements, 853  
Lateral Distribution of Mixed Traffic on Two-Lane Roads, 1728  
Modeling of Pavement Response using Nonlinear Cross-Anisotropy Approach, 1711  
Pavement Mechanics and Performance, 2079  
Performance of Overburnt Distorted Bricks as Aggregates in Pavement Works, 1352  
Rate-Type Model for Bituminous Mixtures and Its Application to Sand Asphalt, 497

## SUBJECT INDEX

- Reclaimed Hydrated Fly Ash as a Geomaterial, 1283  
Seasonal Deterioration of Unsurfaced Roads, 857  
Statistical Modeling of User Perceptions of Infrastructure Condition: Application to the Case of Highway Roughness, 1677  
Stochastic Spatial Excitation Induced by a Distributed Contact on Homogenous Gaussian Random Fields, 505  
Structural Performance Monitoring of an Unstabilized Fly Ash-Based Road Subbase, 1769  
Study of In Situ Pavement Material Properties Determined from FWD Testing, 1745  
Sudden Failure of a Heavily Loaded Container Pavement, 912  
Three-Dimensional Pavement Analysis with Nonlinear Subgrade Materials, 1321  
Transverse Pavement Grooving against Hydroplaning. I: Simulation Model, 1709  
Transverse Pavement Grooving against Hydroplaning. II: Design, 1710  
Turnpike Transformation, 2038
- Payment**  
Security of Payment Legislation — Case of a Blunt but Practical and Equitable Instrument, 1427
- PCB**  
Bioremediation of Surfactant Flush Wastewater from Wood Treatment Soil, 595  
Microcosm Approach to Study Transport of Polychlorinated Biphenyls in Sediment, 676  
PCB Volatilization from Sediments, 594  
Predicting the Performance of Activated Carbon-, Coke-, and Soil-Amended Thin Layer Sediment Caps, 688
- PCE**  
Biodegradation of Tetrachloroethene by Chitin Fermentation Products in a Continuous Flow Column System, 673  
Field Investigation at a Chlorinated Ethylene Contaminated Site, 1963  
Field Monitoring of a Permeable Reactive Barrier for Removal of Chlorinated Organics, 605  
Multiyear Temporal Changes in Chlorinated Solvent Concentrations at 23 Monitored Natural Attenuation Sites, 672  
Simultaneous and Sequential Photosolysis of TCE and PCE, 586
- Peak flow**  
Flood Estimation by GIUH-Based Clark and Nash Models, 1124
- NRCS (SCS) Synthetic Curvilinear Dimensionless Unit Hydrograph**, 1236
- Peak Discharge Estimation using Analytical Probabilistic and Design Storm Approaches**, 1075
- Peat**  
In Situ Pore Pressure Responses of Native Peat and Soil under Train Load: A Case Study, 904
- Pedestrians**  
Completing the Circle, 2023  
Influence of Pedestrians' Entry Process on Pedestrian Delays at Signal-Controlled Crosswalks, 1757
- Modeling Crash Types: New Insights into the Effects of Covariates on Crashes at Rural Intersections**, 1692

## Performance characteristics

- Temporal Variation in Consumer Spatial Behavior in Shopping Streets, 1792
- Peer review**  
Differences between Experts and Novices in the Review of Engineering Journal Papers, 1409
- Penetration**  
New Approach to Determine Three-Dimensional Contacts in Blocks System: Penetration Edges Method, 42  
Soil Penetration Modeling in Microtunneling Projects, 347
- Penetration resistance**  
Effect of Penetration Rate on Penetrometer Resistance in Clay, 887  
Numerical Analysis of T-Bar Penetration in Soft Clay, 53
- Penetration tests**  
Effect of Penetration Rate on Penetrometer Resistance in Clay, 887  
Interpretation of Impact Penetration Measurements in Soft Clays, 848
- Pennsylvania**  
Effects of Flood Control Structures on Flood Response for Hurricane Floyd in the Brandywine Creek Watershed, Pennsylvania, 1115  
Integrated Hydrodynamic and Water Quality Modeling System to Support Nutrient Total Maximum Daily Load Development for Wissahickon Creek, Pennsylvania, 644
- Placed in Context**, 2026
- Rapid Bridge Replacement: Processes, Techniques, and Needs for Improvements**, 400
- Rapid Bridge Replacement under Emergency Situation: Case Study**, 130
- Turnpike Transformation**, 2038
- People movers**  
Automated Access, 2036  
Automated People Mover Standards — Part 1 (ASCE 21-05), 2051
- Performance characteristics**  
Application of Hygrothermal Modeling Tool to Assess Moisture Response of Exterior Walls, 101  
Approximate Floor Acceleration Demands in Multistory Buildings. I: Formulation, 6  
Assessing Damage to Airport Pavement Structure due to Complex Gear Loads, 1761  
Assessment of Dynamic Measurement Accuracy of GPS in Three Directions, 1656  
Conceptual Planning Process for Electrical Construction, 417  
Construction Delays in Hong Kong Civil Engineering Projects, 352  
Correlation of Aggregate Test Parameters to Hot Mix Asphalt Pavement Performance in Hawaii, 1672  
Design Criteria for Seam and Sheetng-to-Framing Connections of Cold-Formed Steel Shear Panels, 1496  
Design Factors Affecting the Flow of Water through Below-Ground Concrete Vaults, 737  
Displacement-Based Design of Supplemental Dampers for Seismic Retrofit of a Framed Structure, 1526

## Performance characteristics

- Empirical Evaluation of Structural Frame Performance Criteria: Realizing the Potential of Hybrid Concrete Construction, 316
- Enhancement of Denitrification in Upflow Sludge Bed Reactors with Sludge Wasting, 635
- Hydraulic Performance Curves for Highway Culverts, 978
- Iterative Linear Approach for Nonlinear Nonhomogeneous Stochastic Pavement Management Models, 1689
- Lessons Learned on Jointed Concrete Pavement Rehabilitation Strategies in Texas, 1690
- Pavement Mechanics and Performance, 2079
- Performance and Analyses of Mechanically Stabilized Earth Walls in the Tecomán, Mexico Earthquake, 1395
- Performance Evaluation of Reference Evapotranspiration Equations across a Range of Indian Climates, 1190
- Performance Prediction of Bridge Deck Systems using Markov Chains, 1378
- Quantitative Measurement of Successful Performance from the Project Manager's Perspective, 415
- Simple Model for Structural Evaluation of Asphalt Concrete Pavements at the Network Level, 1141
- System Model for Analyzing Design Productivity, 1240
- Permeability**
- Compatibility with Jet A-1 of a GCL Subjected to Freeze — Thaw Cycles, 920
- Construction of Concrete-Faced Rockfill Dams with Weak Rocks, 849
- Effect of Convergence on Nonlinear Flow in Porous Media, 973
- Effect of Wet — Dry Cycles and Cation Exchange on Gas Permeability of Geosynthetic Clay Liners, 871
- Electrokinetic Nanoparticle Treatment of Hardened Cement Paste for Reduction of Permeability, 1323
- Estimating Slope Stability Reduction due to Rain Infiltration Mounding, 890
- Identification of Poreelastic Constants of "Tight" Rocks from Laboratory Tests, 33
- Laboratory Evaluation of Smear Zone and Correlation between Permeability and Moisture Content, 867
- Macro- and Microstructural Investigations on Strength and Durability of Pumice Concrete at High Temperature, 1320
- Nondestructive and Laboratory Evaluation of Damage Gradients in Concrete Structure Exposed to Cryogenic Temperatures, 1368
- Penetrating Sealants for Concrete Bridge Decks — Selection Procedure, 156
- Vertical Drain Consolidation with Parabolic Distribution of Permeability in Smear Zone, 866
- Permits**
- Approximate Analysis of Bridges for the Routing and Permitting Procedures of Overweight Vehicles, 132
- Personnel management**
- Case for Drug Testing of Construction Workers, 1242
- Effect of Humor Usage by Engineers at Construction Sites, 1247
- Fundamental Principles of Workforce Management, 297
- Job Performance Evaluation for Construction Companies: An Analytic Network Process Approach, 370

## 2006 ASCE TRANSACTIONS

- Leveraging Personality for Business Success, 1921
- Motivational Climate of Construction Apprentice, 341
- Proposed Subcontractor-Based Employee Motivational Model, 303
- Strategic Management of Human Resources in Construction, 1248
- Summary Report: Leading the Way as Full Diversity Partners — A Senior Executive Workshop on Critical Skills for Courageous Leaders, 1905
- Perturbation**
- Solving Wave Dispersion Equation for Dissipative Media using Homotopy Perturbation Technique, 1857
- Peru**
- Tiquip: Water Engineering Masterpiece of the Inca Empire, 2093
- Pesticides**
- Transformation of DDT and its Metabolites by Various Abiotic Methods, 662
- Petroleum**
- Bioremediation of Petroleum-Contaminated Soil using Composting, 1951
- Local Rotations in Borehole Breakouts — Observed and Modeled Stress Field Rotations and Their Implications for the Petroleum Industry, 52
- Petroleum refining**
- Gasification of Aromatic Volatile Organic Compounds Generated from Petroleum and Refinery Industries with Syngas Recycling, 1956
- pH**
- Concentration — Duration — Frequency Curves for pH in a Stream in the Great Smoky Mountains, 765
- Phenol**
- Biodegradation of Phenol with Wastewater as a Cosubstrate in Upflow Anaerobic Sludge Blanket, 759
- Continuous Cometabolic Transformation of 4-Chlorophenol in the Presence of Phenol in a Hollow Fiber Membrane Bioreactor, 617
- Simultaneous Removal of Phenol and Nitrate in an Anaerobic Bioreactor, 722
- Phosphorus**
- Contrasting the Benefits of Primary Clarification versus Prefermentation in Activated Sludge Biological Nutrient Removal Systems, 720
- Development and Application of a Phosphorus Model for a Shallow Oxbow Lake, 753
- Development of a Simple Phosphorus Model for a Large Urban Watershed: A Case Study, 642
- Evaluation of a Sludge Yield and Phosphorus Removal in a Cannibal Solids Reduction Process, 735
- Methodological Aspects of using Blast Furnace Slag for Wastewater Phosphorus Removal, 746
- Microbial Adaptability to Organic Loading Changes in an Enhanced Biological Phosphorus Removal Process, 701
- Nutrient Removal in a Cold-Region Wastewater Stabilization Pond: Importance of Ammonia Volatilization, 633
- Removal of Immiscible Contaminants from Sandy Soils Monitored by Means of Dielectric Measurements, 704
- Study of Total Maximum Daily Load and Nonpoint Source Pollution Control Strategies for Reservoir Watershed, 1954

## SUBJECT INDEX

## Pipelines

### Physical properties

- Case Study of an S-Shaped Spillway using Physical and Numerical Models, 1021  
Coupled Mechanical and Chemical Behavior of Bentonite Engineered with a Controlled Organic Phase, 907  
Field Evaluation of Crushed Glass – Dredged Material Blends, 831  
Laboratory Evaluation of Crushed Glass-Dredged Material Blends, 830

### Piers

- Live-Bed Local Pier Scour Experiments, 995  
Load Transfer in Rammed Aggregate Piers, 51  
A Robust Macroelement Model for Soil — Pile Interaction under Cyclic Loads, 898  
Stress Zones Near Displacement Piers: I. Plastic and Liquefied Behavior, 782  
Stress Zones near Displacement Piers: II. Radial Cracking and Wedging, 783

### Piezoelectricity

- Application of Cement-Based Piezoelectric Sensors for Monitoring Traffic Flows, 1724  
Electroelastic Response of a Laminated Composite Plate with Piezoelectric Sensors and Actuators, 526  
Three-Dimensional Free Vibration Analysis of Multi-phase Piezocomposite Structures, 524

### Pile driving

- Mitigation of Soil Movements from Pile Driving, 1977

### Pile foundations

- Impact of Routine Quality Assurance on Reliability of Bored Piles, 835  
Termination Criteria for Jacked Pile Construction and Load Transfer in Weathered Soils, 854

### Pile groups

- Bearing Capacity of Piles Rafts on Soft Clay Soils, 927  
Behavior of Axially Loaded Pile Groups Driven in Clayey Silt, 814  
Data Reduction of Horizontal Load Full-Scale Tests on Bored Concrete Piles and Pile Groups, 847  
Experimental Investigation of Clear-Water Local Scour at Pile Groups, 1042  
Interaction Diagram and Load Effects for Vertical Pile Groups with Application to the AASHTO LRFD, 1484

- Passive Earth Pressure Mobilization during Cyclic Loading, 884

- Pile Spacing Effects on Lateral Pile Group Behavior: Load Tests, 894

- Pile Spacing Effects on Lateral Pile Group Behavior: Analysis, 895

- Raked Piles — Virtues and Drawbacks, 852

- Soil-Pile Response to Blast-Induced Lateral Spreading: I: Field Test, 793

- Soil-Pile Response to Blast-Induced Lateral Spreading: II: Analysis and Assessment of the  $p-y$  Method, 794

### Pile load tests

- Pile Spacing Effects on Lateral Pile Group Behavior: Load Tests, 894

### Pile tests

- Impact of Routine Quality Assurance on Reliability of Bored Piles, 835

### Piles

- Analytical Solution for Piles Supporting Combined Lateral Loads, 899  
CFRP Repair and Strengthening of Structurally Deficient Piles: Design Issues and Field Application, 191  
Combined Finite- and Boundary-Element Analysis of the Effects of Tunneling on Single Piles, 49  
Control of Scour at Vertical Circular Piles under Waves and Current, 959  
Cyclic Lateral Load Behavior of a Pile Cap and Backfill, 883  
Drag Force on Single Piles in Clay Subjected to Surcharge Loading, 20  
DSC Model for Soil and Interface Including Liquefaction and Prediction of Centrifuge Test, 769  
Influence Zone for End Bearing of Piles in Sand, 891  
Lateral Resistance of Single Pile Located near Geosynthetic Reinforced Slope, 901  
Live-Bed Local Pier Scour Experiments, 995  
Numerical Solution for Laterally Loaded Piles in a Two-Layer Soil Profile, 910  
Observed Performance of Long Steel H-Piles Jacked into Sandy Soils, 779  
Physio-Chemical Changes in Clay Caused by Ion Migration from Lime Piles, 1281  
Pile Spacing Effects on Lateral Pile Group Behavior: Load Tests, 894  
Pile Spacing Effects on Later: I Pile Group Behavior: Analysis, 895  
Raked Piles — Virtues and Drawbacks, 852  
A Robust Macroelement Model for Soil — Pile Interaction under Cyclic Loads, 898  
Simple Dynamic Model for Fender Pile Analysis and Design, 1895  
Soil-Pile Response to Blast-Induced Lateral Spreading: I: Field Test, 793  
Soil-Pile Response to Blast-Induced Lateral Spreading: II: Analysis and Assessment of the  $p-y$  Method, 794

### Pipe flow

- 3D Simulation of Combining Flows in 90° Rectangular Closed Conduits, 954  
Detection of Partial Blockage in Single Pipelines, 952  
Hydraulic Elements Chart for Pipe Flow using New Definition of Hydraulic Radius, 1030  
Time-Line Interpolation Errors in Pipe Networks, 961  
Total Friction Loss along Multiple Outlets Pipes with Open End, 1167

### Pipe networks

- Adjusting Nodal Demands in SCADA Constrained Real-Time Water Distribution Network Models, 942  
Time-Line Interpolation Errors in Pipe Networks, 961

### Pipelines

- Behavior of Buried Flexible Pipe under High Fills and Design Implications, 903  
Guidelines for Pipeline On-Bottom Stability on Liquefied Noncohesive Seabeds, 1883  
Hydraulic Optimization of Transient Protection Devices using GA and PSO Approaches, 1805  
Numerical Modeling of Wave-Induced Liquefaction around Pipelines, 1881  
Optimal Scheduling of Replacement and Rehabilitation of Water Distribution Systems, 1155  
Pipelines 2006 — Service to the Owner, 2080

## Pipelines

- Risk Management: Lessons from Six Continents, 1244  
Soil Restraint to Oblique Movement of Buried Pipes in Dense Sand, 1681  
Systematic Evaluation of One-Dimensional Unsteady Friction Models in Simple Pipelines, 1000

## Pipes

- Design of a Rigid Cutoff Wall, 34  
Evaluation of Local Bending in Profile-Wall Polyethylene Pipes, 1762  
Evaluation of the Parameters Influencing Self-Healing in Earth Dams, 860  
Improved Simulation of Flow Regime Transition in Sewers: Two-Component Pressure Approach, 987  
In Situ Pore Pressure Responses of Native Peat and Soil under Train Load: A Case Study, 904  
Mechanistic Model for Self-Healing of Core Cracks in Earth Dams, 861  
Numerical Error in Weighting Function-Based Unsteady Friction Models for Pipe Transients, 1001  
Range of Validity of the Transient Damping Leakage Detection Method, 1025  
Safe Distance between Large-Diameter Rock Pipe Bursting and Nearby Buildings and Buried Structures, 1699  
Splicing of Precast Concrete-Filled FRP Tubes, 224  
Three-Dimensional CFD Predictions and Experimental Comparison of Pressure Drop of Some Common Pipe Fittings in Turbulent Flow, 426

## Plane strain

- Plane Strain and Axially Symmetric Consolidation in Unsaturated Soils, 24

## Planets

- Mars Soil Mechanical Properties and Suitability of Mars Soil Simulants, 73

## Planning

- Conceptual Planning Process for Electrical Construction, 417  
Developing Multiple Indicators and Triggers for Drought Plans, 1817  
Infrastructure Planning Handbook -- Planning, Engineering, and Economics, 2075  
Quantitative Measurement of Successful Performance from the Project Manager's Perspective, 415  
Sequence Planning for Electrical Construction, 324  
What is Preproject Planning, Anyway?, 1241

## Plastic analysis

- Critical Inclination of Compression Struts in Concrete Beams, 1508  
Reliability of Steel Frames Designed with Advanced Analysis, 1465

## Plastic deformation

- Performance of Structures before and during Failure, 1972

## Plastic hinges

- Modeling Steel Frame Buildings in Three Dimensions. I: Panel Zone and Plastic Hinge Beam Elements, 470

- Plastic Hinge Integration Methods for Force-Based Beam — Column Elements, 1462

## Plasticity

- Drained and Undrained Strength Interpretation for Low-Plasticity Silts, 802

## 2006 ASCE TRANSACTIONS

- Dynamic Ratcheting in Elastoplastic Single-Degree-of-Freedom Systems, 475

- General Formulation of Two Kinematic Hardening Constitutive Models with a Smooth Elastoplastic Transition, 41

- Ground Movement Predictions for Braced Excavations in Undrained Clay, 821

- How Reliable is the Plasticity Index for Estimating the Liquefaction Potential of Clayey Sands?, 790

- Interpretation of Impact Penetration Measurements in Soft Clays, 848

- Stress Zones Near Displacement Piers: I. Plastic and Liquefied Behavior, 782

- Unified Sand Model Based on the Critical State and Generalized Plasticity, 580

## Plates

- Analysis of Finite Strain Anisotropic Elastoplastic Fracture in Thin Plates and Shells, 81

- Buckling of Simply Supported Rectangular Reissner-Mindlin Plates Subjected to Linearly Varying In-Plane Loading, 491

- Damage-Coupled Progressive Failure and Yield Line Analyses of Metal Plates, 483

- Debonding Strength of Steel Beams Strengthened with CFRP Plates, 195

- Design of Circular Base Plates, 1970

- Design Provisions for Sections Containing Unstiffened Elements with Stress Gradient, 8

- Determination of Nonlinear Softening Behavior at FRP Composite/Concrete Interface, 484

- Dynamic Stability of Ferromagnetic Beam-Plates with Magnetoelastic Interaction and Magnetic Damping in Transverse Magnetic Fields, 476

- Electroelastic Response of a Laminated Composite Plate with Piezoelectric Sensors and Actuators, 526

- Fatigue of Corrugated-Web Plate Girders: Experimental Study, 1574

- Full-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1500

- Influence of Functionally Graded Material on Buckling of Skew Plates under Mechanical Loads, 528

- Integrated Optimization of Control System for Smart Cylindrical Shells using Modified GA, 66

- Shaking Table Test of a 1:20 Scale High-Rise Building with a Transfer Plate System, 1610

- Small-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1499

- System Identification of Partially Restrained Composite Plates using Measured Natural Frequencies, 521

- Tests on the Ductility of Reinforced Concrete Beams Retrofitted with FRP and Steel Near-Surface Mounted Plates, 199

- Wave Interaction with a Flexible Porous Breakwater in a Two-Layer Fluid, 540

## Platforms

- An Avoidable Tragedy, 2039

- The Gulf of Mexico Decommissioning Market, 369

- Liquefaction Phenomena underneath Marine Gravity Structures Subjected to Wave Loads, 1885

- Offshore Decommissioning Cost Estimation in the Gulf of Mexico, 313

## Plumes

- Multiple Tandem Jets in Cross-Flow, 1027

## SUBJECT INDEX

### Pore water pressure

- Natural Gradient Tracer Test for a Permeable Reactive Barrier in Denmark. I: Field Study of Tracer Movement, 1966
- Natural Gradient Tracer Test for a Permeable Reactive Barrier in Denmark. II: Spatial Moments Analysis and Dispersion of Conservative Tracer, 1967
- Remediation of a TCE Plume using a Three-Component Strategy, 1952
- Poisson ratio**
- Concentration — Duration — Frequency Curves for pH in a Stream in the Great Smoky Mountains, 765
- Poles**
- Design of Steel Transmission Pole Structures (ASCE/SEI 48-05), 2058
- Fatigue Behavior of Welded Aluminum Light Pole Support Details, 1628
- Finite-Element Analysis of Tapered Steel and Fiber-Reinforced Plastic Bridge Camera Poles, 164
- Reliability-Based Design of Utility Pole Structures, 2082
- Residual Stress Measurement of Welded Aluminum Light Pole Supports, 1597
- Structural Retrofitting of Deteriorated Concrete Lighting Poles using FRP Sheets in Wet Layup — Field Application, 211
- Political factors**
- Impact of Politics on the Colorado River Basin Water Agreement: In-Depth Administrative Analysis, 1911
- Sharing Water in Times of Scarcity: Guidelines and Procedures in the Development of Effective Agreements to Share Water Across Political Boundaries, 2085
- Pollutants**
- Analytical Urban Storm Water Quality Models Based on Pollutant Buildup and Washoff Processes, 734
- Applicability of Equilibrium Isotherm Models for the Biosorptive Uptakes in Comparison to Activated Carbon-Based Adsorption, 764
- Estimating Pollutant Mass Accumulation on Highways during Dry Periods, 711
- Quantifying Long-Term NPS Pollutant Flux in an Urbanizing Watershed, 643
- Start at the Source, 2001
- Zirconia-Supported Copper Oxide — A Catalyst for Removal of Vehicular Exhaust Gas Pollutants, 707
- Pollution**
- Control of PAHs from Incineration by Activated Carbon Fibers, 650
- Development of a University Laboratory Chemical Inventory and Exchange Program, 1945
- Dynamic Characteristics of Particle Size Distribution in Highway Runoff: Implications for Settling Tank Design, 695
- Recent Progress in the Modeling of Corrosion of Structural Steel Immersed in Seawaters, 1152
- Polyethylene**
- High-Density Polyethylene Membrane Containing Fe<sup>6+</sup> as a Contaminant Barrier, 690
- Polyethylene Duct Cracking on Posttensioning Tendons in Florida Segmented Bridges, 1327
- Validation of Shoring Made of HDPE Pipe or CGS Pipe Normally Used for Culverts and Sewers, 1974
- Polymers**
- Confirmation of Aqueous Polymer Sorption on Contaminant Barrier Clay using TGA, 1293
- Estimation of Diffusion Coefficients and Solubilities for Organic Solvents Permeation through High-Density Polyethylene Geomembrane, 657
- Quantitative Model of Coagulation with Inorganic Polymer Flocculant PACl: Application of the PCNM, 647
- The Role of Bioflocculation on Suspended Solids and Particulate COD Removal in the Trickling Filter Process, 655
- Use of Inorganic Polymer to Improve the Fire Response of Balsa Sandwich Structures, 1303
- Polynomials**
- Chebyshev Finite-Spectral Method for 1D Bousinesq-Type Equations, 1876
- Ponds**
- Artificial Neural Network Modeling of Dissolved Oxygen in a Wetland Pond: The Case of Hovi, Finland, 1090
- Case Study: Design and Operation of Sustainable Urban Infiltration Ponds Treating Storm Runoff, 1775
- Ecofriendly Concrete with High Volume of Lagoon Ash, 1310
- Pools**
- Hydraulics of Plane Plunge Pool Scour, 976
- Pore pressure**
- Effect of Gas on Pore Pressures in Wet Landfills, 829
- In Situ Pore Pressure Responses of Native Peat and Soil under Train Load: A Case Study, 904
- Laboratory Study of Liquefaction due to Wave-Seabed Interaction, 856
- Physics of Liquefaction Phenomena around Marine Structures, 1877
- Pore size distribution**
- Constriction Size of Geotextile Filters, 2
- Pore water**
- Compatibility with Jet A-1 of a GCL Subjected to Freeze — Thaw Cycles, 920
- Influence of Pore-Water Velocity on Transport Behavior of Cadmium: Equilibrium versus Nonequilibrium, 1958
- Pore water pressure**
- Behavior of Unsaturated Layered Soil Columns during Infiltration, 1105
- Large-Scale Experiments on Pore Pressure Generation underneath a Caisson Breakwater, 1884
- Pore Pressure Response Following Undrained uCPT Sounding in a Dilating Soil, 915
- Porothermoelastic Analysis of the Response of a Stationary Crack using the Displacement Method, 437
- Shear Strength and Pore-Water Pressure Characteristics during Constant Water Content Triaxial Tests, 815
- Stress Zones near Displacement Piers: II. Radial Cracking and Wedging, 783
- Sudden Failure of a Heavily Loaded Container Pavement, 912
- Thermohydromechanical Modeling of a Full-Scale Tunnel Sealing Clay Bulkhead, 778

- Vertical Drain Consolidation with Parabolic Distribution of Permeability in Smear Zone, 866
- Poroelasticity**
- Effective Medium Theories for Multicomponent Poroelastic Composites, 486
- Hydraulic Damping of Saturated Poroelastic Soils During Steady-State Vibration, 523
- Identification of Poroelastic Constants of "Tight" Rocks from Laboratory Tests, 33
- Pore Pressure Response Following Undrained uCPT Sounding in a Dilating Soil, 915
- Porochemoelastic Solution for an Inclined Borehole in a Transversely Isotropic Formation, 510
- Porosity**
- Area-Rated Rational Coefficients for Portland Cement Pervious Concrete Pavement, 1098
- Compressibility Moduli for Porous Materials Incorporating Volume Fraction, 562
- Formulas for Sediment Porosity and Settling Velocity, 1016
- Heat Flow through Soils and Effects on Thermal Storage Cycle in High-Mass Structures, 64
- Macro- and Microstructural Investigations on Strength and Durability of Pumice Concrete at High Temperature, 1320
- Porosity Fluctuations in Desiccating Samples of Grout-Stabilized Soil, 1289
- Spatial Moment Analysis for One-Dimensional Non-isothermal Quartz Transport and Dissolution/Precipitation in Fracture-Matrix System, 1106
- Porous materials**
- Compressibility Moduli for Porous Materials Incorporating Volume Fraction, 562
- Freezing - Thawing Model for Soils and Rocks, 1286
- Porous media**
- Application of UVP within Porous Beds, 1028
- Area-Rated Rational Coefficients for Portland Cement Pervious Concrete Pavement, 1098
- Capillarity and Evaporation Exacerbated Seepage Losses from Unlined Channels, 1235
- Decreasing Measuring Errors of a Thermal Groundwater Flowmeter, 1195
- Effect of Convergence on Nonlinear Flow in Porous Media, 973
- Effect of Metallic Iron Concentration on End-Product Distribution during Metallic Iron-Assisted Auto-trophic Denitrification, 712
- Effective Medium Theories for Multicomponent Poroelastic Composites, 486
- Elastoplastic Damage Modeling in Unsaturated Rocks and Applications, 23
- Enhancement of Remediation of NAPL Contaminated Fractured Permeable Formations — Modeling Study, 589
- Fully Nonlinear Boussinesq-Type Equations for Waves and Currents over Porous Beds, 457
- Hydraulic Damping of Saturated Poroelastic Soils During Steady-State Vibration, 523
- Improving Fluid Flow in Clarifiers using a Highly Porous Media, 726
- Parametric Study of One - Dimensional Solute Transport in Deformable Porous Media, 870
- Solving Wave Dispersion Equation for Dissipative Media using Homotopy Perturbation Technique, 1857
- Turbulent Boundary Layer Flows above a Porous Surface Subject to Flow Injection, 553
- Wave Interaction with a Flexible Porous Breakwater in a Two-Layer Fluid, 540
- Portland cements**
- Area-Rated Rational Coefficients for Portland Cement Pervious Concrete Pavement, 1098
- Assessing the Carbonation Behavior of Cementitious Materials, 1351
- Early Hydration Process of Portland Cement Paste by Electrical Measurement, 1272
- Metakaolin as an Extender in South African Cement, 1332
- Role of an Amorphous Silica in Portland Cement Concrete, 1348
- Soil Stabilization using Basic Oxygen Steel Slag Fines, 1285
- Post tensioning**
- Experimental Evaluation of Posttensioned Hybrid Coupled Wall Subassemblies, 1538
- Nondestructive Dynamic Evaluation of a Concrete Reaction Wall — Numerical and Experimental Studies, 1389
- Posttensioned Anchorage Zone Enhancement with Fiber-Reinforced Concrete, 159
- Seismic Design and Analytical Modeling of Posttensioned Hybrid Coupled Wall Subassemblies, 1539
- Time-Dependent Behavior of Posttensioned Wood Howe Bridges, 1480
- Vibration Tension Measurement of External Tendons in Segmental Posttensioned Bridges, 161
- Postbuckling**
- Local-Plate and Distortional Postbuckling Behavior of Cold-Formed Steel Lipped Channel Columns with Intermediated Stiffeners, 1491
- Mechanics of Web Panel Postbuckling Behavior in Shear, 1595
- The Most Degrading Postbuckling Mode of Pin-Jointed Structures, 513
- Postbuckling Analysis of Geometrically Imperfect Conical Shells, 574
- Postbuckling of Beams Subjected to Intermediate follower Force, 436
- Postbuckling of Elastic Columns with Second-Mode Imperfection, 527
- Postbuckling of Moderately Thick Imperfect Rings under External Pressure, 569
- Thermomechanical Postbuckling Analysis of Cross-Ply Laminated Cylindrical Shell Panels, 448
- Potable water**
- Assessing Performance under Regulatory Evolution: A European Transit System Perspective, 1798
- Bayesian Belief Networks to Integrate Monitoring Evidence of Water Distribution System Contamination, 1825
- Charge Reversal Effect on Blanket in Full-Scale Floc Blanket Clarifier, 756
- Chromium Redox Chemistry in Drinking Water Systems, 694
- Comparative Analysis of Water Vulnerability Assessment Methodologies, 1146
- Comparison of Physical Sampling and Real-Time Monitoring Strategies for Designing a Contamination Warning System in a Drinking Water Distribution System, 1834

## SUBJECT INDEX

- Inactivation Kinetics of the Cyanobacterial Toxin Microcystin-LR by Free Chlorine, 692
- Iron Oxide Coated Sand for Arsenic Removal: Investigation of Coating Parameters using Factorial Design Approach, 1962
- Lime-Soda Softening Process Modifications for Enhanced NOM Removal, 600
- Model for Estimating Acute Health Impacts from Consumption of Contaminated Drinking Water, 1831
- Potential flow**
- Seepage from a Rectangular Ditch to the Groundwater Table, 1192
- Powerplants**
- Improving Air-Cooled Condenser Performance in Combined Cycle Power Plants, 429
- Sustainability and Economics of the Advanced High-Temperature Reactor, 432
- Precipitation**
- Arsenic Removal from Water by Moving Bed Active Filtration, 583
- Climate Model Simulation of Point Rainfall Frequency Characteristics, 1127
- Guidelines for Cloud Seeding to Augment Precipitation, 2073
- Updated Precipitation Frequency Estimates for Kansas City: Comparison with TP-40 and HYDRO-35, 1092
- Using Radar Data to Partition Precipitation into Rain and Snow in a Hydrologic Model, 1093
- Predictions**
- Application of Support Vector Machine in Lake Water Level Prediction, 1091
- Bivariate Quasi-Steady Model for Prediction of Roof Corner Pressures, 61
- Challenges in Predicting Power Output from Offshore Wind Farms, 430
- Coordinate Transformation between Two Geodetic Datums of Taiwan by Least-Squares Collocation, 1649
- Damage and Damage Prediction for Wood Shearwalls Subjected to Simulated Earthquake Loads, 1381
- Determining Attribute Weights in a CBR Model for Early Cost Prediction of Structural Systems, 396
- Determining Equivalent Linear Parameters for Use in a Capacity Spectrum Method of Analysis, 1445
- Development of a Response Surface for Prediction of Nitrate Removal in Sulfur — Limestone Autotrophic Denitrification Fixed-Bed Reactors, 721
- Distortion Buckling Tests on Cold-Formed Steel Beams, 1490
- DSC Model for Soil and Interface Including Liquefaction and Prediction of Centrifuge Test, 799
- Durability Prediction for GFRP Reinforcing Bars using Short-Term Data of Accelerated Aging Tests, 216
- Evaluation of the National Weather Service Operational Hydrologic Model and Forecasts for the American River Basin, 1111
- Frequency Dependence of Human Response to Wind-Induced Building Motion, 1468
- HAZUS-MH Hurricane Model Methodology. II: Damage and Loss Estimation, 1931
- Impact of Limiters on Accuracy of High-Resolution Flow and Transport Models, 443
- Local Geoid Improvement using GPS and Leveling Data: Case Study, 1655
- Prestressing**
- Multiple Linear Regression Model for Total Bed Material Load Prediction, 983
- Normalized Test for Prediction of Debonding Failure in Concrete Elements Strengthened with CFRP, 240
- Performance Prediction of Bridge Deck Systems using Markov Chains, 1378
- Predictability of Annual Sediment Loads based on Flood Events, 1108
- Predicting Construction Cost using Multiple Regression Techniques, 362
- Predicting End Bearing Capacity of Post-Grouted Drilled Shaft in Cohesionless Soils, 822
- Predicting Speeds in an Urban Right-Turn Lane, 1684
- Prediction Models for Debonding Failure Loads of Carbon Fiber Reinforced Polymer Retrofitted Reinforced Concrete Beams, 193
- Prediction of Ductile Fracture in Steel Connections using SMCS Criterion, 1455
- Prediction of Soil Composition from CPT Data using General Regression Neural Network, 272
- Predictive Model for the Water Retention Curve of Deformable Clayey Soils, 881
- Quantifying the Effect of Rock Strength Criteria on Minimum Drilling Mud Weight Prediction using Polaxial Rock Strength Test Data, 38
- Rate of Deposition of Fine Sediment from Suspension, 985
- Reliable Real-Time Framework for Short-Term Freeway Travel Time Prediction, 1765
- Short-Term Freeway Traffic Flow Prediction: Bayesian Combined Neural Network Approach, 1675
- Statistical Mixed Effects Models for Evaluation and Prediction of Accelerated Pavement Testing Results, 1748
- Theoretical Analysis of Transfer Lengths in Pretensioned Prestressed Concrete Members, 545
- Truck Models for Improved Fatigue Life Predictions of Steel Bridges, 111
- Validation of a Model for Predicting Schedule Changes in Highway Work Zones — Case Studies, 1733
- VOF Model for Simulation of a Free Overfall in Trapezoidal Channels, 1212
- Void Growth Model and Stress Modified Critical Strain Model to Predict Ductile Fracture in Structural Steels, 1627
- Prefabrication**
- Double-Layer Prefabricated FRP Grids for Rapid Bridge Deck Construction: Case Study, 208
- Preservation**
- Evolution of Bricks and Brick Masonry in the Early History of its Use in the Region of Today's Serbia, 1341
- Pressures**
- Allowable Bearing Pressures of Bridge Sills on GRS Abutments with Flexible Facing, 855
- Bivariate Quasi-Steady Model for Prediction of Roof Corner Pressures, 61
- Compressibility Moduli for Porous Materials Incorporating Volume Fraction, 562
- Effect of Pressure Fluctuations on the Quality of Fluidization and on the Generation of Particulate Matters during Incineration, 708
- Prestressing**
- Concrete Beams Strengthened with Prestressed Near Surface Mounted CFRP, 194

## Prestressing

- Critical Inclination of Compression Struts in Concrete Beams, 1508  
Effective Slab Width in Prestressed Twin-Girder Composite Decks, 1573  
Modeling of Prestressed Concrete-Filled Circular Composite Tubes Subjected to Bending and Axial Loads, 1483  
Preflex Beams: A Method of Calculation of Creep and Shrinkage Effects, 108  
Theoretical Analysis of Transfer Lengths in Pre-tensioned Prestressed Concrete Members, 545  
Torsional Design of Hybrid Concrete Box Girders, 136

## Pricing

- Achieving Water Use Efficiency in Irrigation Districts, 1846  
Benefit-Cost Analysis of Variable Pricing Projects: QuickRide HOT Lanes, 1682  
Benefit-Cost Analysis of Variable Pricing Projects: SR-91 Express Lanes, 1683  
Derived Willingness-to-Pay for Household Water Use with Price and Probabilistic Supply, 1845  
Influence of School Accessibility on Housing Values, 1785  
Price and Nonprice Criteria for Contractor Selection, 367  
Procurement Routes in Public Building and Construction Projects, 356  
Testing Vickery's Revenue Equivalence Theory in Construction Auctions, 330

## Private sector

- Factor Analysis of Public Clients' Best-Value Objective in Public — Privately Partnered Infrastructure Projects, 383  
Influence of the National Performance Review on Supervisors in Government Organizations, 1920  
Public Clients' Best Value Perspectives of Public Private Partnerships in Infrastructure Development, 298  
**Privatization**  
CAPM-Based Valuation of Financial Government Supports to Infeasible and Risky Private Infrastructure Projects, 312  
Factor Analysis of Public Clients' Best-Value Objective in Public — Privately Partnered Infrastructure Projects, 383

## Probabilistic methods

- Combining Rainfall-Runoff Model Outputs for Improving Ensemble Streamflow Prediction, 1130  
CPT-Based Probabilistic and Deterministic Assessment of in Situ Seismic Soil Liquefaction Potential, 873  
Critical Bed Shear Stress for Unisize Sediment, 949  
Derivation of Transition Probability Matrices for Pavement Deterioration Modeling, 1678  
Hybrid Course Linking Natural Hazards with Probability and Statistics, 1425  
Optimal Scheduling of Replacement and Rehabilitation of Water Distribution Systems, 1155  
Probabilistic Critical Excitation Method for Earthquake Energy Input Rate, 538  
Probabilistic Model for the Assessment of Historic Buildings under Permanent Loading, 1361  
Probability of Fatigue Failure in Steel Catenary Risers in Deep Water, 539  
Reliability and Human Factors in Geotechnical Engineering, 836

## 2006 ASCE TRANSACTIONS

- Runoff Quality Analysis of Urban Catchments with Analytical Probabilistic Models, 1801

### Probabilistic models

- Adaptive Optimization and Systematic Probing of Infrastructure System Maintenance Policies under Model Uncertainty, 1156  
Generalized Economic Modeling for Infrastructure and Capital Investment Projects, 1139  
Modeling Cost Escalation in Large Infrastructure Projects, 373  
Peak Discharge Estimation using Analytical Probabilistic and Design Storm Approaches, 1075  
Probabilistic Demand Models and Fragility Curves for Reinforced Concrete Frames, 1593  
Probabilistic Neural Networks Application for Vehicle Classification, 1693

### Probability

- Analytical Urban Storm Water Quality Models Based on Pollutant Buildup and Washoff Processes, 734  
Automated Statistical Analysis in Stochastic Project Scheduling Simulation, 315  
Domain Decomposition Method for Calculating the Failure Probability of Linear Dynamic Systems Subjected to Gaussian Stochastic Loads, 482  
Estimating Transition Probabilities in Markov Chain-Based Deterioration Models for Management of Wastewater Systems, 1802  
First-Order Reliability Method for Probabilistic Liquefaction Triggering Analysis using CPT, 809  
Four Alternative Definitions of the Fuzzy Safety Factor, 83  
Joint First-Passage Probability and Reliability of Systems under Stochastic Excitation, 441  
Logistic Regression Model for Evaluating Soil Liquefaction Probability using CPT Data, 843  
Mitigating Risk from Abnormal Loads and Progressive Collapse, 1397  
Optimal Design with Probabilistic Objective and Constraints, 445  
Optimal Inspection Scheduling of Steel Bridges using Nondestructive Testing Techniques, 134  
Probabilistic Behavior of Floods of Record in the United States, 1120  
Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Single Maintenance Type, 1537  
Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Combination of Maintenance Types, 1619  
Probabilistic Service Life Assessment and Maintenance Planning of Concrete Structures, 1521  
Probability Density Functions in the Analysis of Hydraulic Conductivity Data, 1116  
Probability-Based Bridge Network Performance Evaluation, 167  
Reliability of Shallow Foundations Subjected to Multidirectional Seismic Loading, 842  
Return Period of Recorded Ground Motion, 1522  
Statistical Characterization of Fiber-Reinforced Polymer Composite Material Properties for Structural Design, 1569  
Updated Precipitation Frequency Estimates for Kansas City: Comparison with TP-40 and HYDRO-35, 1092

## SUBJECT INDEX

### Probability density functions

Probability Density Function of Instantaneous Drag Forces and Shear Stresses on a Bed, 1050

### Probability distribution

Bivariate Flood Frequency Analysis Using the Copula Method, 1086

Distribution System Contamination Events: Exposure, Influence, and Sensitivity, 1830

Influence of Uncertainties in the Estimation Procedure of Floodwater Level, 1036

### Process control

Contractor Process Improvement for Enhancing Construction Productivity, 307

### Procurement

Comparing Procurement Methods for Design-Build Projects, 311

Legal Challenge to a Best-Value Procurement System, 1906

Model for Financial Renegotiation in Public-Private Partnership Projects and Its Policy Implications: Game Theoretic View, 355

Public Clients' Best Value Perspectives of Public Private Partnerships in Infrastructure Development, 298

### Productivity

Analysis of Construction Worker Injuries That Do Not Result in Lost Time, 320

Application of Lean Concepts and Simulation Analysis to Improve Efficiency of Drainage Operations Maintenance Crews, 317

Case for Drug Testing of Construction Workers, 1242

Construction Delays in Hong Kong Civil Engineering Projects, 352

Contractor Process Improvement for Enhancing Construction Productivity, 307

Crew Production Rates for Contract Time Estimation: Beam Erection, Deck, and Rail of Highway Bridges, 328

Effects of Schedule Pressure on Construction Performance, 306

Fast-Track Urban Freeway Rehabilitation with 55-H Weekend Closures: I-710 Long Beach Case Study, 334

Fundamental Principles for Avoiding Congested Work Areas — A Case Study, 1989

Fundamental Principles of Workforce Management, 297

Measuring Project Level Productivity on Transportation Projects, 319

Neural Networks for Estimating the Productivity of Concreting Activities, 353

Productivity and Equity of Different Irrigation Schedules under Limited Water Supply, 1203

Soil Penetration Modeling in Microtunneling Projects, 347

Structural Insulated Panels: Impact on the Residential Construction Process, 366

Summary Report: Leading the Way as Full Diversity Partners — A Senior Executive Workshop on Critical Skills for Courageous Leaders, 1905

System Model for Analyzing Design Productivity, 1240

### Professional development

Emotional Intelligence and Leadership Behavior in Construction Executives, 1251

### Project management

Mentoring in Engineering, 1909

Survey of the Construction Industry Relative to the use of CPM Scheduling for Construction Projects, 357

### Professional practice

At a Crossroads — Is Value-based Compensation the Answer?, 1919

Civil Engineering Crisis, 1907

Educating Engineers to Create a Sustainable Future, 631

Engineering Experience and Competitions Implement ABET Criteria, 1419

GEO-Volution: The Evolution of Colorado's Geological and Geotechnical Engineering Practice, 2070

### Progressive failure

Behavior and Design of Commercial Multistory Buildings Subjected to Blast, 1398

Comparison of Various Procedures for Progressive Collapse Analysis, 1402

Global System Considerations for Progressive Collapse with Extensions to Other Natural and Man-Made Hazards, 1406

Mitigating Risk from Abnormal Loads and Progressive Collapse, 1397

Modeling the Impact of Failed Members for Progressive Collapse Analysis of Frame Structures, 1403

Murrah Building Bombing Revisited: A Qualitative Assessment of Blast Damage and Collapse Patterns, 1399

Preventing Disproportionate Collapse, 1396

Progressive Collapse — An Implosion Contractor's Stock in Trade, 1405

Progressive Collapse of Structures: Annotated Bibliography and Comparison of Codes and Standards, 1407

Static Equivalency in Progressive Collapse Alternate Path Analysis: Reducing Conservatism While Retaining Structural Integrity, 1401

Study of Mitigation Strategies for Progressive Collapse of a Reinforced Concrete Commercial Building, 1404

### Project management

Addressing Security in Early Stages of Project Life Cycle, 1259

Application of Dependency Structure Matrix for Activity Sequencing in Concurrent Engineering Projects, 336

Assessment with 360° Evaluations of Leadership Behavior in Construction Project Managers, 1246

Constructability State of Practice Report, 325

Construction Delays and Their Causative Factors in Nigeria, 354

Construction Delays in Hong Kong Civil Engineering Projects, 352

Construction Management of a Small-Scale Accelerated Pavement Testing Facility, 1388

Construction Scheduling and Progress Control using Geographical Information Systems, 285

Contractors' Views of the Potential Causes of Inconsistencies between Design and Construction in Saudi Arabia, 1372

Contractual Management in PPP Projects: Evaluation of Legal versus Relational Contracting for Service Delivery, 1415

Critical Factors Affecting Schedule Performance: Evidence from Indian Construction Projects, 375

## Project management

- Developing a Complexity Measure for Project Schedules, 343  
Developing Knowledge Landscapes through Project-Based Learning, 1416  
Development of an Industry Foundation Classes Assembly Viewer, 257  
Downside Risks in Construction Projects Developed by the Civil Service: The Case of Spain, 372  
Economic Value of Building Faster, 363  
Examining the Business Impact of Owner Commitment to Sustainability, 326  
Forecasting Project Status by using Fuzzy Logic, 406  
Generalized Economic Modeling for Infrastructure and Capital Investment Projects, 1139  
Human Systems Engineering™ — A Trilogy, Part II: May The Force Be With You: Anatomy Of Project Failures, 1904  
Influences Impacting Leadership Development, 1245  
Innovative Final-Year Undergraduate Design Project Course using an International Project, 1432  
Interpretation of Automatically Monitored Lifting Equipment Data for Project Control, 256  
The Limitations of Planning: The Importance of Learning, 382  
Management and Construction of the Three Gorges Project, 349  
Measuring Project Level Productivity on Transportation Projects, 319  
Multiproject Planning and Resource Controls for Facility Management, 416  
Neural Networks for Estimating the Productivity of Concreting Activities, 353  
Non-Unit-Based Planning and Scheduling of Repetitive Construction Projects, 346  
Only Dynamics Can Absorb Dynamics, 403  
Preparing for Design-Build Projects: A Primer for Owners, Engineers, and Contractors, 2081  
Quantitative Measurement of Successful Performance from the Project Manager's Perspective, 415  
Relative Effectiveness of Project Delivery and Contract Strategies, 288  
Risk Management: Lessons from Six Continents, 1244  
Scheduling Construction Projects using Evolutionary Algorithm, 374  
Survey of the Construction Industry Relative to the use of CPM Scheduling for Construction Projects, 357  
System Model for Analyzing Design Productivity, 1240  
Use of a WBS Matrix to Improve Interface Management in Projects, 294  
Virtual Shop Model for Experimental Planning of Steel Fabrication Projects, 281  
Web-Enabled System Dynamics Model for Error and Change Management on Concurrent Design and Construction Projects, 273  
Web-Services Environment for Collaborative Management of Product Life-Cycle Costs, 318  
What is Preproject Planning, Anyway?, 1241  
Work Continuity Constraints in Project Scheduling, 289

## Protective structures

- Hydraulic Optimization of Transient Protection Devices using GA and PSO Approaches, 1805  
Loading of a Gavel-Buried Steel Pipe Subjected to Rockfall, 913

## 2006 ASCE TRANSACTIONS

### Public health

- Attachment of Fecal Indicator Bacteria to Particles in the Neuse River Estuary, N.C., 736  
Evaluation of Drinking Water Treatment Technology: An Entropy-Based Fuzzy Application, 728  
Health Risk Assessment for a Contaminated Site: A Case Study, 1964  
Inactivation Kinetics of the Cyanobacterial Toxin Microcystin-LR by Free Chlorine, 692  
Model for Estimating Acute Health Impacts from Consumption of Contaminated Drinking Water, 1831

### Public policy

- Considering the Environment in Transportation Planning: Review of Emerging Paradigms and Practice in the United States, 1776  
Considering the Environment in Transportation Planning: Review of Emerging Paradigms and Practice in the United States., 1777

### Public safety

- Case Study: Numerical Simulations of Debris Flow below Stože, Slovenia, 943  
Delay between Sensing and Response in Water Contamination Events, 1145  
Structures Congress 2006: Structural Engineering and Public Safety, 2092

### Public services

- Contractual Management in PPP Projects: Evaluation of Legal versus Relational Contracting for Service Delivery, 1415

### Public transportation

- Developing Integrated Schedules for Urban Rail and Feeder Bus Operation, 1788  
Discrete Choice Model for Defining a Parking-Fee Policy on Island of Ortigia, Siracusa, 1789  
Operational Integration of Suburban Railway and Public Buses — Case Study of Mumbai, 1718

### Public works

- Downside Risks in Construction Projects Developed by the Civil Service: The Case of Spain, 372

### Publications

- Differences between Experts and Novices in the Review of Engineering Journal Papers, 1409  
Research Publication Trends and Topics in Computing in Civil Engineering, 246

### Pull-out resistance

- Continuous Interface Elements Subject to Large Shear Deformations, 21  
Soil — Nail Pullout Interaction in Loose Fill Materials, 36

### Pultrusion

- Buckling of GFRP Columns: An Empirical Approach to Design, 242  
Characterization of Unistrut Connection Method with Pultruded Fiber-Reinforced Polymer Channels, 1342  
Multifunctional Hybrid GFRP/Steel Joint for Concrete Slab Structures, 244

### Pumping tests

- Installation of Horizontal Wells in Landfilled Waste using Directional Drilling, 859

### Pumps

- Derived Operating Rules for Allocating Recharges and Withdrawals among Unconnected Aquifers, 1803

## SUBJECT INDEX

- Rainfall**  
Using Radar Data to Partition Precipitation into Rain and Snow in a Hydrologic Model, 1093
- Radial flow**  
Turbulence Dissipation in Stirred Jars, 567
- Radiation**  
Measurement of Light Interception by Navel Orange Orchard Canopies: Case Study of Lindsay, California, 1165
- Numerical Modeling of Thaw Penetration in Frozen Ground Subject to Low-Intensity Infrared Heating, 180
- Radioactive materials**  
Zero-Valent Iron Reactive Materials for Hazardous Waste and Inorganics Removal, 2097
- Radioactive wastes**  
Design Factors Affecting the Flow of Water through Below-Ground Concrete Vaults, 737
- Radioactive Waste Foams: Formation and Mitigation, 680
- Radiography**  
Distribution Deviation of Large Aggregates from Uniformity in Waste Containment Concrete. I: Quantitative Model Formulation, 1268
- Microscopic Evaluation of Strain Distribution in Granular Materials during Shear, 785
- Toward a Physical Damage Variable for Concrete, 512
- Raft foundations**  
Bearing Capacity of Piles Rafts on Soft Clay Soils, 927
- Rail transportation**  
CBD Oriented Commuters' Mode and Residential Location Choices in an Urban Area with Surface Streets and Rail Transit Lines, 1799
- Developing Integrated Schedules for Urban Rail and Feeder Bus Operation, 1788
- Operational Integration of Suburban Railway and Public Buses — Case Study of Mumbai, 1718
- Short Circuit, 2041
- Railroad engineering**  
Cost-Effectiveness of Railway Infrastructure Renewal Maintenance, 1729
- Railroad grade crossings**  
Screening Tools for Considering Grade Separation at Rail-Highway Crossings, 1668
- Short Circuit, 2041
- Railroad stations**  
Above it All, 2042
- The Berlin Connection, 2025
- Railroad tracks**  
Ground Motion Induced by Train Passage, 455
- Monitoring of Steel Railway Floor Beams Prestressed by Steel Plates, 171
- Railroad trains**  
Ground Motion Induced by Train Passage, 455
- Rain gages**  
Hydrologic Modeling of an Eastern Pennsylvania Watershed with NEXRAD and Rain Gauge Data, 1128
- Rainfall**  
Analytical Solutions of Nonlinear Kinematic Wave Model, 1126

- ANN and Fuzzy Logic Models for Simulating Event-Based Rainfall-Runoff, 1064  
 Behavior of Unsaturated Layered Soil Columns during Infiltration, 1105  
 Combining Rainfall-Runoff Model Outputs for Improving Ensemble Streamflow Prediction, 1130  
 Comparative Analysis of Data-Driven and GIS-Based Conceptual Rainfall-Runoff Model, 1070  
 Comparison of Three Alternative ANN Designs for Monthly Rainfall-Runoff Simulation, 1122  
 Development of Optimal and Physically Realizable Unit Hydrograph, 1134  
 Estimating Slope Stability Reduction due to Rain Infiltration Mounding, 890  
 Full-Scale Measurements to Investigate Rain-Wind Induced Cable-Stay Vibration and its Mitigation, 133  
 Gridded Snowmelt and Rainfall-Runoff CWMS Hydrologic Modeling of the Red River of the North Basin, 1080  
 Hydrologic Modeling Inventory: Cooperative Research Effort, 1175  
 Instantaneous Unit Hydrograph Evaluation for Rainfall-Runoff Modeling of Small Watersheds in North and South Central Texas, 1218  
 Optimal Instantaneous Unit Hydrograph from Multistorm Data, 1198  
 Physical Analog of the Linear Reservoir, 1089  
 Semidistributed Form of the Tank Model Coupled with Artificial Neural Networks, 1112  
 Stochastic Point Rainfall Modeling for Correlated Rain Cell Intensity and Duration, 1073  
 Storm-Water Predictions by Dimensionless Unit Hydrograph, 1210  
 Updating Rainfall IDF Relationships to Maintain Urban Drainage Design Standards, 1123  
 Using Radar Data to Partition Precipitation into Rain and Snow in a Hydrologic Model, 1093
- Rainfall duration**  
 Enhanced Runoff Curve Number Model Incorporating Storm Duration and a Nonlinear  $I_s$ -S Relation, 1136  
 Stochastic Point Rainfall Modeling for Correlated Rain Cell Intensity and Duration, 1073
- Rainfall frequency**  
 Comparison of Two Nonparametric Alternatives for Stochastic Generation of Monthly Rainfall, 1094  
 Updated Precipitation Frequency Estimates for Kansas City: Comparison with TP-40 and HYDRO-35, 1092
- Ramps**  
 Energy Dissipation on Block Ramps, 935  
 Energy Dissipation on Reinforced Block Ramps, 1197  
 Flow Resistance of Rock Chutes with Protruding Boulders, 986
- Random processes**  
 Mapping Liquefaction Potential Considering Spatial Correlations of CPT Measurements, 886  
 Simulation of Multidimensional Binary Random Fields with Application to Modeling of Two-Phase Random Media, 496  
 Stochastic Spatial Excitation Induced by a Distributed Contact on Homogenous Gaussian Random Fields, 505

**Random variables**

- Probability of Fatigue Failure in Steel Catenary Risers in Deep Water, 539

**Random vibration**

- Evaluation of Karhunen-Loeve, Spectral, and Sampling Representations for Stochastic Processes, 453  
 Joint First-Passage Probability and Reliability of Systems under Stochastic Excitation, 441

**Random waves**

- Efficacy of Hilbert and Wavelet Transforms for Time-Frequency Analysis, 543  
 Prediction of Long Forcing Waves for Harbor Agitation Studies, 1871

**Reactors**

- Combined Removal of Carbon and Nitrogen in an Integrated UASB-Jet Loop Reactor Bioreactor System, 669

- Development of a Response Surface for Prediction of Nitrate Removal in Sulfur-Limestone Autotrophic Denitrification Fixed-Bed Reactors, 721

- Dissolution of Wollastonite in a Packed Bed Contactor, 634

- Dyed Microspheres for Quantification of UV Dose Distributions: Photocatalytic Reactor Characterization by Lagrangian Actinometry, 742

- Effects of Surface-Bound  $\text{Fe}^{2+}$  on Nitrate Reduction and Transformation of Iron Oxide(s) in Zero-Valent Iron Systems at Near-Neutral pH, 658

- Enhancement of Denitrification in Upflow Sludge Bed Reactors with Sludge Wasting, 635

- Impact of Particle Aggregated Microbes on UV Disinfection. II: Proper Absorbance Measurement for UV Fluence, 667

- Minimizing Mass Transfer Effects in Granular Iron Batch Tests Using GEM Reactors, 776

- Optimization of an Unstructured First-Order Kinetics Model of Cyclically Operated Bioreactors, 649

- Procedure to Quantify Biofilm Activity on Carriers used in Wastewater Treatment Systems, 745

- Remediation of RDX-Contaminated Water using Alkaline Hydrolysis, 610

- Removal of Lead from Contaminated Water and Clay Soil using a Biosurfactant, 687

- Simultaneous Removal of Carbon and Nitrogen from Swine Wastewater using an Immobilized-Cell Reactor, 630

- Simultaneous Removal of Phenol and Nitrate in an Anaerobic Bioreactor, 722

- Treatment of Dilute Wastewaters using a Novel Submerged Anaerobic Membrane Bioreactor, 604

**Reaeration**

- Jackson River Modeling: 50-Year Perspective, 719

**Real estate properties**

- Real Estate Market Response to Coastal Flood Hazards, 1936

**Recharge basins**

- Uncertainty Analysis of Mound Monitoring for Recharged Water from Surface Spreading Basins, 762

**Reclamation**

- Water Reuse/Recycling and Reclamation in Semiarid Zones: The Israeli Case of Salination and "Hard" Surfactants Pollution of Aquifers, 675

## SUBJECT INDEX

## Regulations

### Reconstruction

Catastrophe-Induced Destruction and Reconstruction, 1924

Completing the Circle, 2023

Fast-Track Urban Freeway Rehabilitation with 55-H Weekends Closures: I-710 Long Beach Case Study, 334

Impact of Tunnel Reconstruction on Stream Water Quality in Great Smoky Mountains Natl. Park, 1129 Special Report: The Big Uneasy, 2033

### Recreation

Determining Free Flight Performance by Surveying Engineering Techniques, 1653

Value of Instream Recreation in the Sonoran Desert, 1806

### Recycling

Automated Measurement of Railway Ballast Angularity, 1331

Design Issues for Concrete Reinforced with Steel Fibers, Including Fibers Recovered from used Tires, 1339

Development of Mix Design Procedure for Cold In-Place Recycling with Foamed Asphalt, 1274

Effects of Silica Fume and Rice Husk Ash on the Properties of Heavyweight Concrete, 1301

Estimation of RAP's Binder Viscosity using GPC without Binder Recovery, 1324

Evaluation of Foamed Asphalt Cold In-Place Pavement Recycling Using Nondestructive Techniques, 1770

Failure Investigation of a Foamed-Asphalt Highway Project, 1140

Field Evaluation of Crushed Glass – Dredged Material Blends, 831

Gasification of Aromatic Volatile Organic Compounds Generated from Petroleum and Refinery Industries with Syngas Recycling, 1956

High-Carbon Fly Ash in Manufacturing Conductive CLSM and Concrete, 1347

Laboratory Evaluation of Crushed Glass–Dredged Material Blends, 830

Material-Related Aspects of Asphalt Recycling — State-of-the-Art, 1270

The Paper Alternative, 2015

Potential of Wood Waste Ash as an Additive in Concrete, 1330

Rheological Characterization of Asphalt Emulsions Residues, 1304

Role of an Amorphous Silica in Portland Cement Concrete, 1348

Soil Stabilization using Basic Oxygen Steel Slag Fines, 1285

Stabilizing Soft Fine-Grained Soils with Fly Ash, 1291

Statistical Modeling to Forecast Odor Levels of Biosolids Applied to Reuse Sites, 652

Thermochemical Analysis in the Presintering Phase of Aggregates from Sludge-Marine Clay Mixes, 1267

Using Crushed Clay Brick as Coarse Aggregate in Concrete, 1319

Volume Change Behaviors of Expansive Soils Stabilized with Recycled Ashes and Fibers, 1292

Water Reuse/Recycling and Reclamation in Semiarid Zones: The Israeli Case of Salinization and "Hard" Surfactants Pollution of Aquifers<sup>1</sup>, 675

### Redundancy

Robust Mobile Ad Hoc Space for Collaboration to Support Disaster Relief Efforts Involving Critical Physical Infrastructure, 247

### Reefs

Cross-Shore Internal Waves in Zanpa Coastal Region of Okinawa Island, 1858

### Regression analysis

Compaction Delay Effects on Properties of Lime-Treated Soil, 1287

Fracture Toughness of Wood Fiber Gypsum Panels from Size Effect Law, 507

Fuzzy Logic Model for Equilibrium Scour Downstream of a Dam's Vertical Gate, 1038

Leaching of Lime from Fly Ash Stabilized with Lime and Gypsum, 1273

Modeling and Analysis of the Link between Accessibility and Employment Growth, 1703

Predicting Construction Cost using Multiple Regression Techniques, 362

Statistical Considerations for Predicting Residual Value of Heavy Equipment, 359

Surface Analysis of Chesapeake Bay Water Quality Response to Different Nutrient and Sediment Loads, 625

Urban Runoff Quality Characterization and Load Estimation in Saskatoon, Canada, 750

What Does the Construction Industry Value in its Workers?, 392

### Regression models

Comparison of Modeling and Measurement Accuracy of Road Condition Data, 1742

Logistic Regression Model for Evaluating Soil Liquefaction Probability using CPT Data, 843

Methodology to Develop Median Barrier Warrant Criteria, 1691

Modeling of Lake Ice Characteristics in North America using Climate, Geography, and Lake Bathymetry, 187

Multiple Linear Regression Model for Total Bed Material Load Prediction, 983

Oil and Grease Measurement in Highway Runoff — Sampling Time and Event Mean Concentrations, 629

Precipitative Removal of As, Ba, B, Cr, Sr, and V using Sodium Carbonate, 653

Screening Tools for Considering Grade Separation at Rail-Highway Crossings, 1668

Simplified Methodology to Estimate Emissions from Mobile Sources for Ambient Air Quality Assessment, 1753

Stage-Discharge Relations for Low-Gradient Tidal Streams using Data-Driven Models, 979

Statistical Mixed Effects Models for Evaluation and Prediction of Accelerated Pavement Testing Results, 1748

### Regulations

Assessing the Financial Feasibility of Utility-Provided Backup Power during Project Site Planning, 419

Evaluation of Programs for Regulating Withdrawal of Surface Water under the Riparian Legal System, 1841

Future Environmental Regulation Issues to Promote Energy Efficiency, 427

New Process Design Procedure for Dealing with Variable Trickling Filter Effluent Suspended Solids, 684

## Regulations

Start at the Source, 2001

### Rehabilitation

- Acoustic Emission Damage Assessment of Steel/CFRP Bonds for Rehabilitation, 214  
CFRP Repair and Strengthening of Structurally Deficient Piles: Design Issues and Field Application, 191  
Condition Assessment of Water Distribution Pipes, 1151  
Condition Rating Model for Underground Infrastructure Sustainable Water Mains, 1376  
Determination of Required Falling Weight Deflectometer Testing Frequency for Pavement Structural Evaluation at the Network Level, 1671  
Effectiveness of GFRP Sheets for Shear Strengthening of Timber, 237  
Effects of FRP-Concrete Interface Bond Properties on the Performance of RC Beams Strengthened in Flexure with Externally Bonded FRP Sheets, 1345  
Estimating Transition Probabilities in Markov Chain-Based Deterioration Models for Management of Wastewater Systems, 1802  
Evaluation of Early Strength Requirement of Concrete for Slab Replacement using Accelerated Pavement Testing, 1749  
Evaluation of Foamed Asphalt Cold In-Place Pavement Recycling Using Nondestructive Techniques, 1770  
Fast-Track Urban Freeway Rehabilitation with 55-H Weekend Closures: I-710 Long Beach Case Study, 334  
Flexural Fatigue Behavior of Reinforced Concrete Beams Strengthened with FRP Fabric and Precured Laminates, 332  
Grace under Pressure, 2013  
Impact of Quality on Building Costs, 1157  
Iterative Linear Approach for Nonlinear Nonhomogenous Stochastic Pavement Management Models, 1689  
Lessons Learned on Jointed Concrete Pavement Rehabilitation Strategies in Texas, 1690  
Long-Term Durability of State Street Bridge on Interstate 80, 125  
Market Fresh, 2019  
Modifying Merchants Bridge, 2022  
Normalized Test for Prediction of Debonding Failure in Concrete Elements Strengthened with CFRP, 240  
Optimal Scheduling of Replacement and Rehabilitation of Water Distribution Systems, 1155  
Past Perfect, 1996  
Performance of a Penetrating Corrosion Inhibitor in Concrete Affected by Carbonation-Induced Corrosion, 1359  
Prioritizing Sanitary Sewers for Rehabilitation using Least-Cost Classifiers, 1154  
Rapid Bridge Replacement: Processes, Techniques, and Needs for Improvements, 400  
Reclaimed Asphalt Pavement Detection and Quantity Determination, 1988  
Rehabilitation of Masonry Walls using Unobtrusive FRP Techniques for Enhanced Out-of-Plane Seismic Resistance, 209  
Renovation of the 17th-Century Ponte Lungo Bridge in Chioggia, Italy, 105  
Streaming Solutions, 1997

## 2006 ASCE TRANSACTIONS

- Structural Response of Elements Combining Ultra-high-Performance Fiber-Reinforced Concretes and Reinforced Concrete, 1615  
Structural Stability of Concrete Gravity Dams Strengthened by Rockfill Buttressing: Hydrostatic Load, 926  
Using Advanced Inspection Technologies to Support Investments in Maintenance and Repair of Transportation Infrastructure Facilities, 1669  
UTW Behavior on Asphalt Pavements Tested with HWLS, 1760
- Reinforcement**
- 3D FE Analysis of Flexible Pavement with Geosynthetic Reinforcement, 1705  
CFRP Strengthening for Punching Shear of Interior Slab — Column Connections, 230  
Debonding Failures of RC Beams Strengthened with Near-Surface Mounted CFRP Strips, 198  
Durability Prediction for GFRP Reinforcing Bars using Short-Term Data of Accelerated Aging Tests, 216  
Effectiveness of GFRP Sheets for Shear Strengthening of Timber, 237  
Experimental and Theoretical Investigations on Geocell-Supported Embankments, 14  
Experimental In-Plane Shear Strength Investigation of Reinforced Concrete Masonry Walls, 1478  
Monitoring of Steel Railway Floor Beams Prestressed by Steel Plates, 171  
Multilaminate Macromodel for Concrete Masonry: Formulation and Verification, 1635  
Posttensioned Anchorage Zone Enhancement with Fiber-Reinforced Concrete, 159  
Probabilistic Demand Models and Fragility Curves for Reinforced Concrete Frames, 1593  
Shear Resistance of FRP RC Beams: Experimental Study, 235  
Stress – Strain Behavior of Large-Scale Circular Columns Confined with FRP Composites, 1450
- Reinforcing steels**
- Implementing a B2B e-Work System to the Approval Process of Rebar Design and Estimation, 248
- Reliability**
- Comparative Study of Fatigue Provisions for the AASHTO Fatigue Guide Specifications and LRFR Manual for Evaluation, 169  
Evaluating the Safety Risk of Narrow Medians using Reliability Analysis, 1701  
First-Order Reliability Method for Probabilistic Liquefaction Triggering Analysis using CPT, 809  
Four Alternative Definitions of the Fuzzy Safety Factor, 83  
Impact of Routine Quality Assurance on Reliability of Bored Piles, 835  
Increased Snow Loads and Wind Actions on Existing Buildings: Reliability of the Norwegian Building Stock, 1618  
Multi-Objective Trade-Offs between Cost and Reliability in the Replacement of Water Mains, 1809  
Quality Control Method for Pile Driving, 879  
Reliability Analysis of Deflection of Buried Flexible Pipes, 1754  
Reliability and Human Factors in Geotechnical Engineering, 836

## SUBJECT INDEX

## Research

- Reliability, Brittleness, Covert Understrength Factors, and Fringe Formulas in Concrete Design Codes, 1439
- Reliability of Steel Doweled Wood Connections Designed to ASCE 16-95, 1482
- Reliability-Based Design of Utility Pole Structures, 2082
- Reliable Real-Time Framework for Short-Term Free-way Travel Time Prediction, 1765
- Robustness Analysis of Two-Dimensional Networks, 1664
- Seismic Fragility Analysis of Structural Systems, 473
- Traffic Data Collection Requirements for Reliability in Pavement Design, 1688
- Uncertainty Analysis of Conventional Water Treatment Plant Design for Suspended Solids Removal, 744
- Using Disturbance Data to Assess Vulnerability of Electric Power Delivery Systems, 1161
- Relocation**  
Moving a Reinforced-Concrete Building: Case Study, 299
- Remedial action**  
Achievement of 100% Removal of Oil from Feathers Employing Magnetic Particle Technology, 661  
Adoption of the International Residential Code in a High Natural Hazards Region — An Overview, 85  
Advanced Oxidation for Treatment of Aqueous Extracts from EDTA Extraction of Pb and Zn Contaminated Soil, 740  
Application of Fenton's Reagent to Remediate Diesel Contaminated Soils, 1941  
Biodegradability of Surfactants under Aerobic, Anoxic, and Anaerobic Conditions, 613  
Bioremediation of Petroleum-Contaminated Soil using Composting, 1951  
Column Study Simulating In Situ Bioremediation of Perchlorate using Acetate as an Organic Substrate, 1950  
Cyclodextrin-Enhanced Electrokinetic Remediation of Soils Contaminated with 2,4-Dinitrotoluene, 718  
Development of a Field Design for In Situ Gaseous Treatment of Sediment Based on Laboratory Column Test Data, 769  
Enhancement of Remediation of NAPL Contaminated Fractured Permeable Formations — Modeling Study, 589  
Evaluating Ozone as a Remedial Treatment for Removing RDX from Unsaturated Soils, 763  
Evaluation of Contaminant Resuspension Potential during Cap Placement at Two Dissimilar Sites, 639  
Factors Influencing Arsenite Removal by Zero-Valent Iron, 749  
Field Monitoring of a Permeable Reactive Barrier for Removal of Chlorinated Organics, 605  
Field Study to Investigate WIDE Technology for TCE Extraction, 880  
Ground Modification and Seismic Mitigation, 2072  
Groundwater Remediation Design using Multiscale Genetic Algorithms, 1837  
Laboratory-Scale Evaluation of Cr(VI) Removal from Clay by Electrokinetics Incorporated with Fe(O) Barrier, 1959  
Low-Temperature Soil Heating using Renewable Energy, 659
- Natural Attenuation Assessment using Mineral Data, 1968
- Predicting the Performance of Activated Carbon-, Coke-, and Soil-Amended Thin Layer Sediment Caps, 688
- Remediation of a TCE Plume using a Three-Component Strategy, 1952
- Remediation of RDX-Contaminated Water using Alkaline Hydrolysis, 610
- Treatment of Contaminated Soils and Groundwater using ISCO, 1939
- Remote sensing**  
GPS Precise Point Positioning Software for Ground Control Point Establishment in Remote Sensing Applications, 1642
- Improved AADT Estimation by Combining Information in Image- and Ground-Based Traffic Data, 1719
- Monitoring Snow-Cover Depletion by Coupling Satellite Imagery with a Distributed Snowmelt Model, 1808
- Reservoir Storage Curve Estimation Based on Remote Sensing Data, 1087
- Satellite Monitoring of Urban Spatial Growth in the Amman Area, Jordan, 1796
- Urban Origins/Destinations from High-Resolution Remote Sensing Images, 1783
- Renovation**  
Landmark Reinvented, 2007  
Renovation of the 17th-Century Ponte Lungo Bridge in Chioggia, Italy, 105
- Repeated loads**  
Identification and Modeling of Permanent Deformations of Asphalt Concrete, 458  
Monotonic and Cyclic Behavior of Two Calcareous Soils of Different Origins, 925  
Sudden Failure of a Heavily Loaded Container Pavement, 912  
Unloading and Reloading Stress – Strain Model for Confined Concrete, 1449
- Replacement**  
Lessons Learned from an Emergency Bridge Replacement Project, 321  
Placed in Context, 2026  
Rapid Bridge Replacement under Emergency Situation: Case Study, 130
- Research**  
Advances in Earth Structures — Research to Practice, 2045  
Case Study: Application of GPR to Detection of Hidden Dangers to Underwater Hydraulic Structures, 932  
Evaluation of the Nash—Sutcliffe Efficiency Index, 1132  
Human Systems Engineering™ — A Trilogy, Part II: May The Force Be With You: Anatomy Of Project Failures, 1904  
Measuring Project Level Productivity on Transportation Projects, 319  
Research Publication Trends and Topics in *Computing in Civil Engineering*, 246  
Unsaturated Soil Mechanics in Engineering Practice, 807  
Vaporizing the Gathering Storm, 2005

## Reservoir operation

### Reservoir operation

Can Reservoir Storage Be Uneconomically Large?, 1854

Effect of Long Internal Waves on the Quality of Water Withdrawn from a Stratified Reservoir, 1047

GIS Visualization and Analysis of River Operations Impacts on Endangered Species Habitat, 1816

Gridded Snowmelt and Rainfall-Runoff CWMS Hydrologic Modeling of the Red River of the North Basin, 1080

Modeling Uncertainty in an Object-Oriented Reservoir Operations Model, 1176

Operating Reservoirs in Changing Conditions, 2078

Optimal Reservoir Operation for Irrigation of Multiple Crops using Genetic Algorithms, 1178

Optimal Reservoir Operations for Irrigation using a Three Spatial Scales Approach, 1179

Watershed and River Systems Management Program: Overview of Capabilities, 1174

### Reservoirs

Case Study: Mapping Tsunami Hazards Associated with Debris Flow into a Reservoir, 931

Drought Storage Allocation Rules for Surface Reservoir Systems, 1842

Ice Stresses in Reservoirs: Effect of Water Level Fluctuations, 183

Life of Maithon Reservoir on Ground of Sedimentation: Case Study in India, 1019

Observation and Simulation of Floodwater Intrusion and Sedimentation in the Shichikashuku Reservoir, 1020

Physical Analog of the Linear Reservoir, 1089

Plane Impulse Waves in Reservoirs, 1888

Porothermoelastic Analysis of the Response of a Stationary Crack using the Displacement Discontinuity Method, 437

Quantitative Estimation of Reservoir Sedimentation from Three Typhoon Events, 1109

Reservoir Storage Curve Estimation Based on Remote Sensing Data, 1087

Response of a Tropical Reservoir to Bubbler Desratification, 682

Three-Dimensional Modeling for Estimation of Hydraulic Retention Time in a Reservoir, 710

Use of Satellite Data for Streamflow and Reservoir Storage Forecasts in the Snake River Basin, 1811

### Residential location

Case Study of Factors Affecting Urban Residential Construction in St. Louis, 1786

CBD Oriented Commuters' Mode and Residential Location Choices in an Urban Area with Surface Streets and Rail Transit Lines, 1799

Comparing High and Low Residential Density: Life-Cycle Analysis of Energy Use and Greenhouse Gas Emissions, 1772

### Residual soils

Laboratory Studies of Two Common Saprolitic Soils in Hong Kong, 864

Termination Criteria for Jacked Pile Construction and Load Transfer in Weathered Soils, 854

### Residual strength

Macro- and Microstructural Investigations on Strength and Durability of Pumice Concrete at High Temperature, 1320

## 2006 ASCE TRANSACTIONS

Residual Stress Measurement of Welded Aluminum Light Pole Supports, 1597

Strength Loss and Localization at Silt Interlayers in Slopes of Liquefied Sand, 7

### Residual stress

Change of Weld Residual Stresses due to Loss of Material, 1630

Fatigue Behavior of Welded Aluminum Light Pole Support Details, 1628

### Resonance

Computation of Short-Crested Deepwater Waves, 1870

Coupling of U-Tube and Shear Layer Oscillations in an Interconnected Flow Compartment, 511

Degradation of Sands due to Combined Sinusoidal Loading, 930

Fundamental Frequency Testing of Reinforced Concrete Beams, 1384

Time-Line Interpolation Errors in Pipe Networks, 961

### Resource management

Developing a Resource Supply Chain Planning System for Construction Projects, 327

MACROS: Multiobjective Automated Construction Resource Optimization System, 1252

Multiproject Planning and Resource Controls for Facility Management, 416

Non-Unit-Based Planning and Scheduling of Repetitive Construction Projects, 346

Operations Management for Engineering Consulting Firms: A Case Study, 1249

Optimal Irrigation Planning under Water Scarcity, 1189

Optimal Planning and Scheduling for Repetitive Construction Projects, 1238

The Place of Fire, 1932

Using Global Positioning System to Improve Materials-Locating Processes on Industrial Projects, 361

### Response spectra

Inelastic Spectrum-Based Approach for Seismic Design Spectra, 1565

Small-Strain Behavior of Granular Soils. II: Seismic Response Analyses and Model Evaluation, 877

### Restoration

Environmental Effects on Epoxy Adhesives Employed for Restoration of Historical Buildings, 1344

Experimental In-Plane Behavior of Tuff Masonry Strengthened with Cementitious Matrix—Grid Composites, 210

Long Mechanical Interaction between Strengthening Materials and Preexisting Structures, 1334

Market Fresh, 2019

Past Perfect, 1996

Phoenix Rises, 1999

Remediation of a TCE Plume using a Three-Component Strategy, 1952

### Retaining walls

Active Thrust Due to Backfill Subject to Lines of Surcharge, 805

Allowable Bearing Pressures of Bridge Sills on GRS Abutments with Flexible Facing, 855

Case History of Geosynthetic Reinforced Segmental Retaining Wall Failure, 921

General Analytical Framework for Design of Flexible Reinforced Earth Structures, 909

## SUBJECT INDEX

## Risk management

- Numerical Model for Reinforced Soil Segmental Walls under Surcharge Loading, 841
- Performance and Analyses of Mechanically Stabilized Earth Walls in the Tecomán, Mexico Earthquake, 1395
- Performance of a Cantilever Retaining Wall, 875
- Pile Behavior due to Excavation-Induced Soil Movement in Clay. I: Stable Wall, 780
- Pile Behavior Due to Excavation-Induced Soil Movement in Clay. II: Collapsed Wall, 781
- Simplified Structural Analysis of Retaining Walls on Stepped Footings, 1973
- Retention basins**
- Performances of Hydraulics and Bedload Sediment Flushing in Rigid Channel using Surge Flows, 1183
- Retrofitting**
- Behavior and Modeling of Fiber Reinforced Polymer-Confined Concrete, 9
- Concrete Beams Strengthened with Prestressed Near Surface Mounted CFRP, 194
- Determination of Nonlinear Softening Behavior at FRP Composite/Concrete Interface, 484
- Effects of FRP-Concrete Interface Bond Properties on the Performance of RC Beams Strengthened in Flexure with Externally Bonded FRP Sheets, 1345
- Empirical Approach for Determining Ultimate FRP Strain in FRP-Strengthened Concrete Beams, 201
- Exposure to Condensation Moisture of Sheathing in Retrofitted Leaky Wall Assemblies, 90
- Full-Scale Experimental Investigation of Repair of Reinforced Concrete Interstate Bridge using CFRP Materials, 138
- History and Aesthetics of the Bronx-Whitestone Bridge, 127
- Identifying Effective and Ineffective Retrofits for Distortion Fatigue Cracking in Steel Bridges Using Field Instrumentation, 178
- Lateral Load Tests on a Two-Story Unreinforced Masonry Building, 1504
- Moment Redistribution in FRP and Steel-Plated Reinforced Concrete Beams, 200
- Multi-Objective Trade-Offs between Cost and Reliability in the Replacement of Water Mains, 1809
- Normalized Test for Prediction of Debonding Failure in Concrete Elements Strengthened with CFRP, 240
- Prediction Models for Debonding Failure Loads of Carbon Fiber Reinforced Polymer Retrofitted Reinforced Concrete Beams, 193
- Quenching Thornton's Thirst, 2043
- Recommendations for Seismic Evaluation and Retrofit of Low-Rise URM Structures, 1506
- Rehabilitation of Masonry Walls using Unobtrusive FRP Techniques for Enhanced Out-of-Plane Seismic Resistance, 209
- Residual Performance of FRP-Retrofitted RC Columns after being Subjected to Cyclic Loading Damage, 219
- Seismic Upgrading of RC Buildings by FRP: Full-Scale Tests of a Real Structure, 1337
- Size and Relative Stiffness Effects on Compressive Failure of Concrete Columns Wrapped with Glass FRP, 1297
- Structural Retrofitting of Deteriorated Concrete Lighting Poles using FRP Sheets in Wet Layup — Field Application, 211
- Tests on the Ductility of Reinforced Concrete Beams Retrofitted with FRP and Steel Near-Surface Mounted Plates, 199
- Three-Parameter Model for Debonding of FRP Plate from Concrete Substrate, 485
- Rewetments**
- Flow-Induced Failure of Cable-Tied Blocks, 964
- Scour Countermeasures for Wing-Wall Abutments, 988
- Reynolds number**
- Effect of Convergence on Nonlinear Flow in Porous Media, 973
- Hydrodynamic Behavior of Asymmetric Oscillatory Boundary Layers at Low Reynolds Numbers, 1040
- Large-Eddy Simulation of High Reynolds Number Turbulent Flow Past a Square Cylinder, 468
- Rheological properties**
- Long-Term Behavior of Timber-Concrete Composite Beams. II: Numerical Analysis and Simplified Evaluation, 1441
- Rheology**
- Deformation of Pores in Viscoplastic Soil Material, 22
- Rigid pavements**
- Evaluation of Early Strength Requirement of Concrete for Slab Replacement using Accelerated Pavement Testing, 1749
- Rational Approach for Base Type Selection, 1746
- Rigid-body dynamics**
- Three-Degree-of-Freedom Rigid Model for Seismic Analysis of Cracked Concrete Gravity Dams, 537
- Rigidity**
- Seismic Design Forces. I: Rigid Nonstructural Components, 1589
- Riparian rights**
- Evaluation of Programs for Regulating Withdrawal of Surface Water under the Riparian Legal System, 1841
- Riprap**
- Energy Dissipation on Reinforced Block Ramps, 1197
- Reduction of Local Scour in the Vicinity of Bridge Pier Groups using Collars and Riprap, 947
- Riprap Failure at Circular Bridge Piers, 966
- Risk**
- Infrastructure Development and Expansion under Uncertainty: A Risk-Preference-Based Lattice Approach, 350
- Risk management**
- Case Study: Dam Safety during Construction, Lessons of the Overtopping Diversion Works at Aguanilpa Dam, 1045
- Catastrophe Risk Models for Wildfires in the Wildland — Urban Interface: What Insurers Need, 1938
- Comparative Analysis of Water Vulnerability Assessment Methodologies, 1146
- Comparative Injury and Fatality Risk Analysis of Building Trades, 342
- Dam-Break Wave-Front Celerity, 938
- Decision Methodology for Allocating Funds across Transportation Infrastructure Assets, 1137
- Developing a Web-Based System for Large-Scale Environmental Hydraulics Problems with Application to Oil Spill Modeling, 264

- Downside Risks in Construction Projects Developed by the Civil Service: The Case of Spain, 372  
 Emerging Legal Risks for Construction Management Professionals, 1914  
 Evaluating the Safety Risk of Narrow Medians using Reliability Analysis, 1701  
 Evaluation of Legal Risks for E-Commerce in Construction, 1438  
 Generalized Economic Modeling for Infrastructure and Capital Investment Projects, 1139  
 Health Risk Assessment for a Contaminated Site: A Case Study, 1964  
 Hedgehog and Fox Strategies for Reducing Risks in Infrastructure Systems, 1935  
 Interactions between Business and Financial Strategies of Large Engineering and Construction Firms, 1254  
 Lessons from Katrina, 2009  
 Managing Rock Blasting Work in Urban Environments, 1978  
 Methodology for Locating Monitoring Stations to Detect Contamination in Potable Water Distribution Systems, 1162  
 Model for Environmental Risk Assessment of Tourism Project Construction on the Egyptian Red Sea Coast, 729  
 Modeling Cost Escalation in Large Infrastructure Projects, 373  
 Optimal Seismic Design Considering Risk Attitude, Societal Tolerable Risk Level, and Life Quality Criterion, 1639  
 Partnering Mechanism in Construction: An Empirical Study on the Chinese Construction Industry, 310  
 The Place of Fire, 1932  
 Quantification of Costs for Dispute Resolution Procedures in the Construction Industry, 1429  
 Reliability and Human Factors in Geotechnical Engineering, 836  
 Risk Factors to Driver Fatalities in Single-Vehicle Crashes: Comparisons between Non-Motorcycle Drivers and Motorcyclists, 1687  
 Risk Management: Lessons from Six Continents, 1244  
 Safety Hazard Identification on Construction Projects, 308  
 Scheduling-Based Risk Estimation and Safety Planning for Construction Projects, 351  
 Screening Level Risk Assessment of Heavy Metal Contamination in Cleveland Area Commons, 627  
 Sensor Placement in Water Networks: A Stochastic Programming Approach, 1820  
 Stochastic Dynamic Programming with Risk Consideration for Transbasin Diversion System, 1812  
 Stochastic Flow Analysis for Predicting River Scour of Cohesive Soils, 980  
 Structural Insulated Panels: Impact on the Residential Construction Process, 366  
 Terrorism Risks and Blast Damage to Built Infrastructure, 1933  
 Using Disturbance Data to Assess Vulnerability of Electric Power Delivery Systems, 1161  
 What is Preproject Planning, Anyway?, 1241
- River basins**
- Can Reservoir Storage Be Uneconomically Large?, 1854  
 Economic Optimization of Conjunctive Use of Surface Water and Groundwater at the Basin Scale, 1848

- Evaluation of the National Weather Service Operational Hydrologic Model and Forecasts for the American River Basin, 1111  
 Methods for Developing Naturalized Monthly Flows at Gaged and Ungaged Sites, 1076  
 Stochastic Dynamic Programming with Risk Consideration for Transbasin Diversion System, 1812  
 Use of Satellite Data for Streamflow and Reservoir Storage Forecasts in the Snake River Basin, 1811  
 Valuing Fisheries and Wetlands using Integrated Economic-Hydrologic Modeling—Mekong River Basin, 1850
- River beds**
- Evaluation of the Micromodel: An Extremely Small-Scale Movable Bed Model, 965  
 Variation of Flow Pattern with Sinuosity in Sine-Generated Meandering Streams, 1031
- River flow**
- Asymptotic Solutions for One-Dimensional Dispersion in Rivers, 940  
 Case Study of Precision of GPS Differential Correction Strategies: Influence on aDcp Velocity and Discharge Estimates, 955  
 Downstream Hydraulic Geometry of Alluvial Channels, 1067  
 GIS Visualization and Analysis of River Operations Impacts on Endangered Species Habitat, 1816  
 Model Study of the Influence of Submerged Tidal Barriers on Estuarine Mixing and Exchange Processes, 1034  
 One-Dimensional Model of Shallow Water Surface Waves Generated by Landslides, 977  
*RiverSpill*: A National Application for Drinking Water Protection, 970
- River systems**
- Managing Irrigation for Better River Ecosystems — A Case Study of the Middle Rio Grande, 1229  
 Watershed and River Systems Management Program: Overview of Capabilities, 1174
- Rivers**
- Bivariate Flood Frequency Analysis Using the Copula Method, 1086  
 Bridge Blockage and Overbank Flow Simulations using HEC-RAS in the Keelung River during the 2001 Nari Typhoon, 963  
 Case Study: Sediment Control at Water Intake for Large Thermal-Power Station on a Small River, 975  
 Downstream Hydraulic Geometry of Alluvial Channels, 1067  
 Dynamic Routing Model with Real-time Roughness Updating for Flood Forecasting, 992  
 Experimental Investigation of Clear-Water Local Scour at Pile Groups, 1042  
 Experimental Study of Ice Jam Formation Dynamics, 186  
 Formation of Breakup Ice Jams at Bridges, 1056  
 Generalized Fick's Law and Fractional ADE for Pollution Transport in a River: Detailed Derivation, 1079  
 Historic Discharge Measurements in Three Rhine Branches, 945  
 Jackson River Modeling: 50-Year Perspective, 719  
 Long-Term Dynamic Modeling Approach to Quantifying Attached Algal Growth and Associated Impacts on Dissolved Oxygen in the Lower Truckee River, Nevada, 739

## SUBJECT INDEX

- Roughness**
- Multiojective Optimal Waste Load Allocation Models for Rivers using Nondominated Sorting Genetic Algorithm-II, 1814
- Multiple Linear Regression Model for Total Bed Material Load Prediction, 983
- New Facility to Study River Abrasion Processes, 994
- Phoenix Rises, 1999
- Radioactive Waste Foams: Formation and Mitigation, 680
- Runoff and Sediment Yield Modeling using Artificial Neural Networks: Upper Siwane River, India, 1078
- Sediment Transport in River Models with Overbank Flows, 939
- Value of Instream Recreation in the Sonoran Desert, 1806
- Road construction**
- Optimal Planning and Scheduling for Repetitive Construction Projects, 1238
- Use of an Infrared Joint Heater to Improve Longitudinal Joint Performance in Hot Mix Asphalt Pavements, 1380
- Road shoulders**
- Structural Adequacy of Flexible Pavements with Types and Widths of Shoulders, 1670
- Roads**
- Modeling Crash Types: New Insights into the Effects of Covariates on Crashes at Rural Intersections, 1692
- Postconstruction Environmental Monitoring of a Fly Ash-Based Road Subbase, 1993
- Reversible Lane Systems: Synthesis of Practice, 1766
- Stress Path Testing of Realistically Cured Lime and Lime/Cement Stabilized Clay, 1288
- Roadside hazards**
- Global Positioning System/GIS-Based Approach for Modeling Erosion from Large Road Networks, 1113
- Rock masses**
- Design and Evaluation of Fiber-Reinforced Polymer Bond-Type Anchorage and Ground Anchors, 29
- Material Spatial Variability and Slope Stability for Weak Rock Masses, 796
- Normal Transmission of S-Wave across Parallel Fractures with Coulomb Slip Behavior, 498
- Rock mechanics**
- Elastoplastic Damage Modeling in Unsaturated Rocks and Applications, 23
- Rockfill structures**
- Loading of a Gavel-Buried Steel Pipe Subjected to Rockfall, 913
- Rocks**
- Aerated Rock Filters for Enhanced Ammonia and Fecal Coliform Removal from Facultative Pond Effluents, 646
- Application of Weibull Statistics to the Tensile Strength of Rock Aggregates, 850
- Construction of Concrete-Faced Rockfill Dams with Weak Rocks, 849
- Design of Rock Protection to Prevent Erosion by Water Flows Down Steep Slopes, 1044
- Freezing - Thawing Model for Soils and Rocks, 1286
- Identification of Poroelastic Constants of "Tight" Rocks from Laboratory Tests, 33
- Limitations in the Back-Analysis of Strength from Failures, 828
- Managing Rock Blasting Work in Urban Environments, 1978
- Numerical Solution for Laterally Loaded Piles in a Two-Layer Soil Profile, 910
- Physically Based Model for Evaluation of Rock Scour due to High-Velocity Jet Impact, 5
- Porothermoelastic Analysis of the Response of a Stationary Crack using the Displacement Discontinuity Method, 437
- Quantifying the Effect of Rock Strength Criteria on Minimum Drilling Mud Weight Prediction using Polaxial Rock Strength Test Data, 38
- Shear Banding in Sandstone: Physical and Numerical Studies, 31
- Soil and Rock Behavior and Modeling, 2088
- Rods**
- Time-Dependent Behavior of Posttensioned Wood Howe Bridges, 1480
- Roofs**
- Above it All, 2042
- Behavior of Complex Hat Shapes used as Truss Chord Members, 1501
- Bivariate Quasi-Steady Model for Prediction of Roof Corner Pressures, 61
- Design Errors: Inefficiency or Carelessness of Designer?, 1383
- Frequency Analysis of Ground Snow Data and Production of the Snow Load Map using Geographic Information System for the Eastern Black Sea Region of Turkey, 1553
- Full-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1500
- Mechanics and Test Study of Two-Dimensional Flexible Membranes, 92
- New Design Procedure for Wind Uplift Resistance of Architectural Metal Roofing Systems, 100
- Small-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1499
- Structural Use of Glass, 98
- Rotation**
- Collapse during Construction of a Precast Girder Bridge, 1375
- Microscopic Evaluation of Strain Distribution in Granular Materials during Shear, 785
- Rotation Response of a Rigid Body under Seismic Excitation, 472
- Three-Degree-of-Freedom Rigid Model for Seismic Analysis of Cracked Concrete Gravity Dams, 537
- Roughness**
- Bond of GFRP Bars in Concrete: Experimental Study and Analytical Interpretation, 227
- Dynamic Routing Model with Real-time Roughness Updating for Flood Forecasting, 992
- Effectiveness of Bermuda Grass as Vegetative Cover in Grassed Waterway: A Simulated Study, 1196
- Equivalent Roughness Height for Plane Bed under Steady Flow, 1048
- Flood Plain Filling by a Monoclinal Flood Wave, 984
- Flow Resistance and Momentum Flux in Compound Open Channels, 1059
- Postpeak Strength of Interfaces in a Stress-Dilatancy Framework, 914

## Roughness

Vehicle-Induced Dynamic Performance of FRP versus Concrete Slab Bridge, 144

### Routes

Economic Heuristic Optimization for Heterogeneous Fleet VRPHESTW, 1694

Geographic Information Systems/National Elevation Data Route Mileage Verification, 1646

Highway Route Optimization Based on Accessibility, Proximity, and Land-Use Changes, 1708

Optimal Transit Route Network Design Problem with Variable Transit Demand: Genetic Algorithm Approach, 1667

Route Selection for a New Transportation System in Hillside Urban Areas: A Case Study in Nagasaki, Japan, 1781

Simulated Annealing - Genetic Algorithm for Transit Network Optimization, 251

Using a Simulated Annealing Algorithm to Solve the Transit Route Network Design Problem, 1676

### Routing

Approximate Analysis of Bridges for the Routing and Permitting Procedures of Overweight Vehicles, 132

Dynamic Routing Model with Real-time Roughness Updating for Flood Forecasting, 992

Evaluation of Dispersion Coefficients in Meandering Channels from Transient Tracer Tests, 1033

Operational Integration of Suburban Railway and Public Buses — Case Study of Mumbai, 1718

### Rubber

Comparative Absorption of Crude Oil from Fresh and Marine Water using Recycled Rubber, 723

Hyperelasticity Model for Finite-Element Analysis of Natural and High Damping Rubbers in Compression and Shear, 440

Influence of Temperature and Pressure on the Dynamic Properties of Rubber-Modified Asphalt Concrete, 1275

Stress-Controlled Filtration with Compressible Particles, 858

Thermoelectric Enhancement of Damping of Sand using Synthetic Ground Rubber, 824

### Rubble-mound breakwaters

Experimental Analysis and Numerical Simulations of Waves and Current Flows around Low-Crested Rubble-Mound Structures, 1856

### Runoff

Analytical Urban Storm Water Quality Models Based on Pollutant Buildup and Washoff Processes, 734

ANN and Fuzzy Logic Models for Simulating Event-Based Rainfall-Runoff, 1064

Area-Rated Rational Coefficients for Portland Cement Pervious Concrete Pavement, 1098

Calibrated Models of Deicing Agent Solids, Pavement Texture, and Specific Conductivity of Highway Runoff, 761

Case Study: Design and Operation of Sustainable Urban Infiltration Ponds Treating Storm Runoff, 1775

Combining Rainfall-Runoff Model Outputs for Improving Ensemble Streamflow Prediction, 1130

Comparative Analysis of Data-Driven and GIS-Based Conceptual Rainfall-Runoff Model, 1070

Development of Optimal and Physically Realizable Unit Hydrograph, 1134

Dioxin in Storm-Water Runoff in Houston, Texas, 770

## 2006 ASCE TRANSACTIONS

Downstream Economic Benefits of Conservation Development, 1804

Dynamic Characteristics of Particle Size Distribution in Highway Runoff: Implications for Settling Tank Design, 695

Enhanced Runoff Curve Number Model Incorporating Storm Duration and a Nonlinear  $I_s$ -S Relation, 1136

Estimating Infiltration in the Upper Split Wash Watershed, Yucca Mountain, NV, 1083

Estimating Pollutant Mass Accumulation on Highways during Dry Periods, 711

Global Positioning System/GIS-Based Approach for Modeling Erosion from Large Road Networks, 1113

Grass Swale-Perforated Pipe Systems for Stormwater Management, 1170

Gridded Snowmelt and Rainfall-Runoff CWMS Hydrologic Modeling of the Red River of the North Basin, 1080

Hydrologic Modeling Inventory: Cooperative Research Effort, 1175

Instantaneous Unit Hydrograph Evaluation for Rainfall-Runoff Modeling of Small Watersheds in North and South Central Texas, 1218

Investigation of Boundary Shear Stress and Pollutant Detachment from Impervious Surface during Simulated Urban Storm Runoff, 592

NRCS (SCS) Synthetic Curvilinear Dimensionless Unit Hydrograph, 1236

Oil and Grease Measurement in Highway Runoff -- Sampling Time and Event Mean Concentrations, 629

Opportunity Costs of Residential Best Management Practices for Stormwater Runoff Control, 1810

Optimal Instantaneous Unit Hydrograph from Multistorm Data, 1198

Peak Discharge Estimation using Analytical Probabilistic and Design Storm Approaches, 1075

Physical Analog of the Linear Reservoir, 1089

Quantifying Long-Term NPS Pollutant Flux in an Urbanizing Watershed, 643

Runoff and Sediment Yield Modeling using Artificial Neural Networks: Upper Siwane River, India, 1078

Runoff Quality Analysis of Urban Catchments with Analytical Probabilistic Models, 1801

Semidistributed Form of the Tank Model Coupled with Artificial Neural Networks, 1112

Start at the Source, 2001

Storm-Water Predictions by Dimensionless Unit Hydrograph, 1210

Time-Step Dependency of Infiltration Errors in the HSPF Model, 1102

Urban Runoff Quality Characterization and Load Estimation in Saskatoon, Canada, 750

Watershed and River Systems Management Program: Overview of Capabilities, 1174

Watershed-Scale Impacts of Forest Buffers on Water Quality and Runoff in Urbanizing Environment, 1815

### Rural areas

Modeling Crash Types: New Insights into the Effects of Covariates on Crashes at Rural Intersections, 1692

Relationship between Speed, Lateral Placement, and Drivers' Eye Movement at Two-Lane Rural Highways, 1734

## Safety

Tr...

mu...

Safe...

an...

Ma...

Usin...

Aca...

Safe...

Case...

Cran...

37...

Expe...

Te...

Hum...

W...

O...

Impa...

T...

37...

Intel...

Light...

st...

Meth...

D...

Sy...

Min...

E...

Opin...

Previ...

Prob...

z...

M...

Safe...

T...

n...

Safe...

F...

Safe...

in...

Sch...

f...

Sec...

Se...

T...

Saf...

Four...

to...

Gen...

F...

Struc...

P...

Saf...

Own...

Phy...

I...

Saf...

Wh...

V...

## SUBJECT INDEX

Sand

- Safety Analysis of Florida Rural Interstate Freeway Travel in Relation to the 65 km/h (40 mi/hr) Minimum Speed Regulation**, 1740
- Safety Impacts of Differential Speed Limits for Trucks and Passenger Cars on Rural Interstate Highways: A Modified Empirical Bayes Approach**, 1665
- Using GPS to Measure the Impact of Construction Activities on Rural Interstates**, 339
- Safety**
- Case for Drug Testing of Construction Workers**, 1242
  - Crane-Related Fatalities in the Construction Industry**, 377
  - Experimental Assessment of Wireless Construction Technologies**, 388
  - Human-Assisted Obstacle Avoidance System using 3D Workspace Modeling for Construction Equipment Operation**, 262
  - Improving the Safety and Efficiency of Materials Transfer at a Construction Site by using an Elevator**, 371
  - Intelligent Utility Locating Tool for Excavators**, 379
  - Lighting Requirements for Nighttime Highway Construction**, 331
  - Methodology for Locating Monitoring Stations to Detect Contamination in Potable Water Distribution Systems**, 1162
  - Minimizing Construction-Related Hazards in Airport Expansion Projects**, 344
  - Optimizing Airport Construction Site Layouts to Minimize Wildlife Hazards**, 1257
  - Preventing Disputes with Empathy**, 1430
  - Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Single Maintenance Type**, 1537
  - Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Combination of Maintenance Types**, 1619
  - Safety Analysis of Florida Rural Interstate Freeway Travel in Relation to the 65 km/h (40 mi/hr) Minimum Speed Regulation**, 1740
  - Safety Analysis of Moving Road Vehicles on a Long Bridge under Crosswind**, 478
  - Safety Assessment of Concrete Tunnel Linings under Fire Load**, 1534
  - Safety Climate in Construction Industry: A Case Study in Hong Kong**, 345
  - Scheduling-Based Risk Estimation and Safety Planning for Construction Projects**, 351
  - Security Barrier Design**, 1981
  - Sensor Placement in Municipal Water Networks with Temporal Integer Programming Models**, 1823
- Safety factors**
- Four Alternative Definitions of the Fuzzy Safety Factor**, 83
  - General Analytical Framework for Design of Flexible Reinforced Earth Structures**, 909
  - Structural Behavior of FRP Composite Bridge Deck Panels**, 141
- Safety programs**
- Owner's Role in Construction Safety**, 304
  - Physical Risk Factors and Controls for Musculoskeletal Disorders in Construction Trades**, 393
- Salaries**
- What Does the Construction Industry Value in its Workers?**, 392
- Saline ground water**
- Regional Salinity Modeling for Conjunctive Water Use Planning in Kheri Command**, 1207
- Salinity**
- Calibration of Electromagnetic Induction for Regional Assessment of Soil Water Salinity in an Irrigated Valley**, 1213
  - Development of GIS-Based Model to Estimate Relative Reductions in Crop Yield due to Salinity and Waterlogging**, 1227
  - Evaluating Regional Solutions to Salinization and Waterlogging in an Irrigated River Valley**, 1166
  - Hydrodynamic Characterization and Modeling of the Arabian Gulf**, 1859
  - Recent Progress in the Modeling of Corrosion of Structural Steel Immersed in Seawaters**, 1152
  - Regional Salinity Modeling for Conjunctive Water Use Planning in Kheri Command**, 1207
  - Water Reuse/Recycling and Reclamation in Semiarid Zones: The Israeli Case of Salination and "Hard" Surfactants Pollution of Aquifers<sup>1</sup>**, 675
- Salt water**
- Numerical Model of Saltwater Transport toward a Pumping Well**, 1103
- Salt water intrusion**
- Growth and Decay of Estuary Ice Cover**, 184
  - Model Study of the Influence of Submerged Tidal Barriers on Estuarine Mixing and Exchange Processes**, 1034
- Sampling**
- Assessing Performance under Regulatory Evolution: A European Transit System Perspective**, 1798
  - Collecting Driving Data to Support Mobile Source Emissions Estimation**, 1756
  - Comparison of Physical Sampling and Real-Time Monitoring Strategies for Designing a Contamination Warning System in a Drinking Water Distribution System**, 1834
  - Laboratory Simulation of Field Sampling: Comparison with Ideal Sampling and Field Data**, 810
  - Oil and Grease Measurement in Highway Runoff — Sampling Time and Event Mean Concentrations**, 629
  - Organic Hazardous Substances in Graywater from Swedish Households**, 700
  - Potential Computational Benefits of Geometric, Kinematic, and Behavioral Downsampling of Microscopic Traffic Network Simulation**, 277
  - Quality Control Method for Pile Driving**, 879
- San Francisco**
- Experimental Evaluation of Compressive Behavior of Orthotropic Steel Plates for the New San Francisco — Oakland Bay Bridge**, 118
  - Regenesis**, 2029
- Sand**
- Accounting for Soil Aging When Assessing Liquefaction Potential**, 811
  - Approach to Separate Sand from Gravel for Bed-Load Transport Calculations in Streams with Bimodal Sediment**, 1051
  - Arsenic Removal from Water by Moving Bed Active Filtration**, 583
  - Bearing Capacity of Square and Circular Footings on a Finite Layer of Granular Soil Underlain by a Rigid Base**, 916

## Sand

- Bioreduction of Hexavalent Chromium in Flow-Through Quartz Sand Columns, 623  
Correlation between Cyclic Resistance Ratios of Intact and Reconstituted Offshore Saturated Sands and Silts with the Same Shear Wave Velocity, 924  
Degradation of Sands due to Combined Sinusoidal Loading, 930  
Degree of Saturation and Liquefaction Resistances of Sand Improved with Sand Compaction Pile, 803  
Design of a Rigid Cutoff Wall, 34  
Deterministic-Based Model of Slow Sand Filtration. I: Model Development, 697  
Deterministic-Based Model of Slow Sand Filtration. II: Model Application, 698  
Determination of Honeycomb Material Properties: Existing Theories and an Alternative Dynamic Approach, 74  
Development of Tensile Hoop Stress during Horizontal Directional Drilling through Sand, 48  
Double Strain Softening and Diagonally Crossing Shear Bands of Sand in Drained Triaxial Tests, 57  
Drained and Undrained Strength Interpretation for Low-Plasticity Silts, 802  
DSC Model for Soil and Interface Including Liquefaction and Prediction of Centrifuge Test, 799  
Factors Affecting the Creep Behavior of Grouted Sand, 823  
How Reliable is the Plasticity Index for Estimating the Liquefaction Potential of Clayey Sands?, 790  
Hydrocarbon Residuals and Containment in Microfine Cement Grouted Sand, 1284  
Influence of Micromaterial Heterogeneity on Strain Localization in Granular Materials, 37  
Influence of Nonplastic Fines on Shear Wave Velocity-Based Assessment of Liquefaction, 878  
Influence of Torque on Lateral Capacity of Drilled Shafts in Sands, 820  
Influence Zone for End Bearing of Piles in Sand, 891  
Iron Oxide Coated Sand for Arsenic Removal: Investigation of Coating Parameters using Factorial Design Approach, 1962  
Lateral Resistance of Single Pile Located near Geosynthetic Reinforced Slope, 901  
Lateral Variations in Suspended Sediment Concentration over Dunes, 1066  
Liquefaction Resistance of Undisturbed and Reconstituted Samples of a Natural Coarse Sand from Undrained Cyclic Triaxial Tests, 797  
Metallic Characterization of Foundry By-Products per Waste Streams and Leaching Protocols, 665  
Microbially Induced Cementation to Control Sand Response to Undrained Shear, 905  
Observed Performance of Long Steel H-Piles Jacked into Sandy Soils, 779  
Particle Shape Effects on Packing Density, Stiffness, and Strength: Natural and Crushed Sands, 832  
Postpeak Strength of Interfaces in a Stress-Dilatancy Framework, 914  
Principal Deviatoric Strain Increment Ratios for Sand having Inherent Transverse Isotropy, 47  
Rate-Type Model for Bituminous Mixtures and Its Application to Sand Asphalt, 497  
Stability of Long Trenches in Sand Supported by Bentonite-Water Slurry, 4  
Strength Loss and Localization at Silt Interlayers in Slopes of Liquefied Sand, 7

## 2006 ASCE TRANSACTIONS

- Thermoelastic Enhancement of Damping of Sand using Synthetic Ground Rubber, 824  
Transport of Edible Oil Emulsions in Clayey Sands: One-Dimensional Column Results and Model Development, 1095  
Transport of Edible Oil Emulsions in Clayey Sands: 3D Sandbox Results and Model Validation, 1096  
Unified Sand Model Based on the Critical State and Generalized Plasticity, 580  
Use of Artificial Neural Networks in the Prediction of Liquefaction Resistance of Sands, 917  
**Sandstone**  
Freezing - Thawing Model for Soils and Rocks, 1286  
Shear Banding in Sandstone: Physical and Numerical Studies, 31  
Sudden Failure of a Heavily Loaded Container Pavement, 912  
**Sandwich structures**  
Durability of FRP Composite Bridge Deck Materials under Freeze-Thaw and Low Temperature Conditions, 147  
Dynamic Characteristics and Effective Stiffness Properties of Honeycomb Composite Sandwich Structures for Highway Bridge Applications, 203  
FEA of Complex Bridge System with FRP Composite Deck, 196  
Nonlinear Response of Double-Wall Cylindrical Shell Vibrations under Random Excitation, 63  
Use of Inorganic Polymer to Improve the Fire Response of Balsa Sandwich Structures, 1303  
Vehicle-Induced Dynamic Performance of FRP versus Concrete Slab Bridge, 144  
**Satellites**  
GPS Precise Point Positioning Software for Ground Control Point Establishment in Remote Sensing Applications, 1642  
Single Epoch Kinematic GPS Positioning Technique in Short Baseline, 1647  
**Saturated soils**  
Degree of Saturation and Liquefaction Resistances of Sand Improved with Sand Compaction Pile, 803  
Hydraulic Damping of Saturated Porcelastic Soils During Steady-State Vibration, 523  
Relating Damping to Soil Permeability, 28  
**Saturation**  
Modeling of Settlement in Saturated and Unsaturated Municipal Landfills, 39  
**Saudi Arabia**  
Contractors' Views of the Potential Causes of Inconsistencies between Design and Construction in Saudi Arabia, 1372  
**Scale effect**  
Bearing Capacity of Square and Circular Footings on a Finite Layer of Granular Soil Underlain by a Rigid Base, 916  
Size and Relative Stiffness Effects on Compressive Failure of Concrete Columns Wrapped with Glass FRP, 1297  
**Scale models**  
Case Study: Refinement of Hydraulic Operation of a Complex CSO Storage/Treatment Facility by Numerical and Physical Modeling, 944

## SUBJECT INDEX

- Evaluation of the Micromodel: An Extremely Small-Scale Movable Bed Model, 965
- Scheduling**
- 3D Scan Information Management System for Construction Management, 301
  - Automated Statistical Analysis in Stochastic Project Scheduling Simulation, 315
  - Comparative Study of University Courses on Critical-Path Method Scheduling, 358
  - Computerized System for Efficient Delivery of Infrastructure Maintenance/Repair Programs, 290
  - Construction Management of a Small-Scale Accelerated Pavement Testing Facility, 1388
  - Construction Scheduling and Progress Control using Geographical Information Systems, 285
  - Critical Factors Affecting Schedule Performance: Evidence from Indian Construction Projects, 375
  - Critical Space Analysis, 335
  - Developing a Complexity Measure for Project Schedules, 343
  - Developing Integrated Schedules for Urban Rail and Feeder Bus Operation, 1788
  - Effects of Schedule Pressure on Construction Performance, 306
  - Examining the Business Impact of Owner Commitment to Sustainability, 326
  - Irrigation Scheduling with Travel Times, 1188
  - Model for Analysis of Factors Affecting Construction Schedule in Highway Work Zones, 1717
  - Modeling Cost Escalation in Large Infrastructure Projects, 373
  - Non-Unit-Based Planning and Scheduling of Repetitive Construction Projects, 346
  - Object-Oriented Scheduling for Repetitive Projects with Soft Logics, 291
  - Operational Integration of Suburban Railway and Public Buses — Case Study of Mumbai, 1718
  - Optimal Planning and Scheduling for Repetitive Construction Projects, 1238
  - Particle Swarm Optimization for Preemptive Scheduling under Break and Resource-Constraints, 314
  - Permutation-Based Particle Swarm Optimization for Resource-Constrained Project Scheduling, 259
  - Reliability and Stability Buffering Approach: Focusing on the Issues of Errors and Changes in Concurrent Design and Construction Projects, 333
  - Scheduling Construction Projects using Evolutionary Algorithm, 374
  - Scheduling-Based Risk Estimation and Safety Planning for Construction Projects, 351
  - Survey of the Construction Industry Relative to the use of CPM Scheduling for Construction Projects, 357
  - Validation of a Model for Predicting Schedule Changes in Highway Work Zones — Case Studies, 1733
- Schools**
- Construction Delivery Systems: A Comparative Analysis of Their Performance within School Districts, 399
  - Influence of School Accessibility on Housing Values, 1785
  - Soils Magic:* Bringing Civil Engineering to the K-12 Classroom, 1417
- Scour**
- Burial of Short Cylinders Induced by Scour under Combined Waves and Currents, 1897
- Secondary flow**
- Clear Water Local Scour by Submerged Three-Dimensional Wall Jets: Effect of Tailwater Depth, 989
  - Control of Scour at Vertical Circular Piles under Waves and Current, 959
  - Countermeasure Toe Protection at Spill-Through Abutments, 956
  - Disturbance Caused by Bed Sills on the Slopes of Steep Streams, 1052
  - Experimental Investigation of Clear-Water Local Scour at Pile Groups, 1042
  - Fuzzy Logic Model for Equilibrium Scour Downstream of a Dam's Vertical Gate, 1038
  - Hydraulics of Plane Plunge Pool Scour, 976
  - Live-Bed Local Pier Scour Experiments, 995
  - Parallel Walls as an Abutment Scour Countermeasure, 982
  - Physically Based Model for Evaluation of Rock Scour due to High-Velocity Jet Impact, 5
  - Reduction of Local Scour in the Vicinity of Bridge Pier Groups using Collars and Riprap, 947
  - Riprap Failure at Circular Bridge Piers, 966
  - Scour around Bankline and Setback Abutments in Compound Channels, 933
  - Scour Countermeasures for Wing-Wall Abutments, 988
  - Scour Downstream of an Apron Due to Submerged Horizontal Jets, 957
  - Similitude of Large-Scale Turbulence in Experiments on Local Scour at Cylinders, 934
  - Stochastic Flow Analysis for Predicting River Scour of Cohesive Soils, 980
- Sea floor**
- Stability of Submarine Pipelines on Liquefied Seabeds, 1878
- Sea walls**
- Computation of Short-Crested Deepwater Waves, 1870
- Sea water**
- Recent Progress in the Modeling of Corrosion of Structural Steel Immersed in Seawaters, 1152
- Sealing**
- Electrokinetic Nanoparticle Treatment of Hardened Cement Paste for Reduction of Permeability, 1323
  - Thermohydromechanical Modeling of a Full-Scale Tunnel Sealing Clay Bulkhead, 778
- Seasonal variations**
- Assignment of Seasonal Factor Categories to Urban Coverage Count Stations using a Fuzzy Decision Tree, 1735
  - Comparison of Three Alternative ANN Designs for Monthly Rainfall-Runoff Simulation, 1122
  - Effect of Forecast-Based Pricing on Irrigated Agriculture: A Simulation, 1843
  - Impact of Tunnel Reconstruction on Stream Water Quality in Great Smoky Mountains Natl. Park, 1129
  - Use of Satellite Data for Streamflow and Reservoir Storage Forecasts in the Snake River Basin, 1811
- Secondary flow**
- Dynamics of Air Flow in Sewer Conduit Headspace, 1009
  - Effects of Velocity Gradients and Secondary Flow on the Dispersion of Solutes in a Meandering Channel, 1061

## Security

### Security

Addressing Security in Early Stages of Project Life Cycle, 1259

Assessing Performance under Regulatory Evolution: A European Transit System Perspective, 1798

Bayesian Belief Networks to Integrate Monitoring Evidence of Water Distribution System Contamination, 1825

Consequence Management Optimization for Contaminant Detection and Isolation, 1829

Contamination Warning in Water Networks: General Mixed-Integer Linear Models for Sensor Location Design, 1824

Contamination Source Identification in Water Systems: A Hybrid Model Trees-Linear Programming Scheme, 1828

Disaster Recovery System Model with E-Government Case Study, 1937

Identification of Contaminant Sources in Water Distribution Systems using Simulation - Optimization Method: Case Study, 1827

Locating Monitors in Water Distribution Systems: Red Team-Blue Team Exercise, 1832

Mixed-Integer Approach for Obtaining Unique Solutions in Source Inversion of Water Networks, 1826

Reduction of Physical Threats to Water Distribution Systems, 1822

Security Barrier Design, 1981

### Sediment

Alternative Computation of Dean's Overfill Ratio, 1868

Application of a Bottom Boundary Layer Model in Contrasting Wave and Current Environments: Grays Harbor, Washington, 1890

Approach to Separate Sand from Gravel for Bed-Load Transport Calculations in Streams with Bimodal Sediment, 1051

Bioavailability Prediction of Polycyclic Aromatic Hydrocarbons in Field-Contaminated Sediment by Mild Extractions, 626

Case Study: Sediment Control at Water Intake for Large Thermal-Power Station on a Small River, 975

Coastal Dynamics 2005 -- State of the Practice, 2055

Development and Application of a Phosphorus Model for a Shallow Oxbow Lake, 753

Development of a Field Design for In Situ Gaseous Treatment of Sediment Based on Laboratory Column Test Data, 769

Effectiveness of Bermuda Grass as Vegetative Cover in Grassed Waterway: A Simulated Study, 1196

Evaluation of Contaminant Resuspension Potential during Cap Placement at Two Dissimilar Sites, 639

Evaluation of the Micromodel: An Extremely Small-Scale Movable Bed Model, 965

Formulas for Sediment Porosity and Settling Velocity, 1016

Global Positioning System/GIS-Based Approach for Modeling Erosion from Large Road Networks, 1113

Impact of Tunnel Reconstruction on Stream Water Quality in Great Smoky Mountains Natl. Park, 1129

Microcosm Approach to Study Transport of Polychlorinated Biphenyls in Sediment, 676

Movement of Finite Amplitude Sediment Accumulations, 1003

Nodal Point Relation for the Distribution of Sediments at Channel Bifurcation, 1043

## 2006 ASCE TRANSACTIONS

### PCB Volatilization from Sediments, 594

Predictability of Annual Sediment Loads based on Flood Events, 1108

Predicting the Performance of Activated Carbon-, Coke-, and Soil-Amended Thin Layer Sediment Caps, 688

Runoff and Sediment Yield Modeling using Artificial Neural Networks: Upper Siwane River, India, 1078

Scour around Bankline and Setback Abutments in Compound Channels, 933

Similitude of Large-Scale Turbulence in Experiments on Local Scour at Cylinders, 934

Solidification of New Zealand Harbor Sediments using Cementitious Materials, 1294

Storm Water Detention Ponds: Modeling Heavy Metal Removal by Plant Species and Sediments, 717

### Sediment concentration

Distribution of Methylmercury in a Mercury-Contaminated Ecosystem, 1961

Lateral Variations in Suspended Sediment Concentration over Dunes, 1066

Quantitative Estimation of Reservoir Sedimentation from Three Typhoon Events, 1109

### Sediment deposits

Performances of Hydraulics and Bedload Sediment Flushing in Rigid Channel using Surge Flows, 1183

Rate of Deposition of Fine Sediment from Suspension, 985

### Sediment load

Multiple Linear Regression Model for Total Bed Material Load Prediction, 983

Surface Analysis of Chesapeake Bay Water Quality Response to Different Nutrient and Sediment Loads, 625

### Sediment transport

Breaking Antidunes: Cyclic Behavior due to Hysteresis, 993

Control of Scour at Vertical Circular Piles under Waves and Current, 959

Critical Bed Shear Stress for Unisize Sediment, 949

Diagonal Cartesian Method for the Numerical Simulation of Flow and Suspended Sediment Transport over Complex Boundaries, 1053

Estuarine and Coastal Modeling — Proceedings of the Ninth International Conference, 2064

Explicit Formulation of the Shields Diagram for Incipient Motion of Sediment, 1041

Flow-Induced Failure of Cable-Tied Blocks, 964

Laboratory Measurements of Bed Load Sediment Transport Dynamics, 1875

Multiple Linear Regression Model for Total Bed Material Load Prediction, 983

New Facility to Study River Abrasion Processes, 994

Scale Independent Linear Behavior of Alluvial Channel Flow, 1002

Scour Countermeasures for Wing-Wall Abutments, 988

Scour Downstream of an Apron Due to Submerged Horizontal Jets, 957

Sediment Transport in River Models with Overbank Flows, 939

Sediment Transport Model for Seepage Erosion of Stream Bank Sediment, 1133

## SUB

Sedim  
950

Sedim

Wat

me

Wa

Sedi

Quan

fro

Sedi

Atta

the

Fund

and

Impr

Por

Life c

tion

Sedi

Water

Tid

189

Sedi

Type

Seepa

Advan

men

Capill

Los

DEM

Duc

Desig

Droug

voi

Earth

Impac

Car

Sedi

Stre

Seepa

Sha

Segme

Modifi

with

Selism

Appli

Ana

Proje

anc

Approp

ry E

Coupl

Buil

Onlin

of C

Seismi

Emb

Seismi

Nu

Seismi

sion

Testin

Brac

## SUBJECT INDEX

- Seismic design**
- Sediment Transport over Ripples in Oscillatory Flow, 950
  - Sedimentation Engineering, 2084
  - Watershed Environmental Hydrology Model: Environmental Module and Its Application to a California Watershed, 1099
  - Sediment yield**
  - Quantitative Estimation of Reservoir Sedimentation from Three Typhoon Events, 1109
  - Sedimentation**
  - Attachment of Fecal Indicator Bacteria to Particles in the Neuse River Estuary, N.C., 736
  - Fundamentals of Bubble Formation during Coagulation and Sedimentation Processes, 664
  - Improving Fluid Flow in Clarifiers using a Highly Porous Media, 726
  - Life of Maithon Reservoir on Ground of Sedimentation: Case Study in India, 1019
  - Sedimentation Engineering, 2084
  - Water Exchange and Sedimentation in an Estuarine Tidal Harbor using Three-Dimensional Simulation, 1893
  - Sedimentation tanks**
  - Type II Settling Data Analysis, 598
  - Seepage**
  - Advances in Unsaturated Soil, Seepage, and Environmental Geotechnics, 2046
  - Capillarity and Evaporation Exacerbated Seepage Losses from Unlined Channels, 1235
  - DEM-FEM Model of Highly Saturated Soil Motion Due to Seepage Force, 1892
  - Design of a Rigid Cutoff Wall, 34
  - Drought Storage Allocation Rules for Surface Reservoir Systems, 1842
  - Earth Dam with Toe Drain on an Impervious Base, 50
  - Impact of Agriculture on Water Quality in the North Carolina Middle Coastal Plain, 1191
  - Sediment Transport Model for Seepage Erosion of Stream Bank Sediment, 1133
  - Seepage to a Drainage Ditch and Optimization of Its Shape, 1234
  - Segmented elements**
  - Modified Skew Bending Model for Segmental Bridge with Unbonded Tendons, 109
  - Seismic analysis**
  - Application of Internally Damped Shearbeam Model to Analysis of Buildings under Earthquakes: Robust Procedure for Quick Evaluation of Seismic Performance, 1550
  - Approximate Floor Acceleration Demands in Multistory Buildings. I: Formulation, 6
  - Coupled Building Control Considering the Effects of Building/Connector Configuration, 1524
  - Online Earthquake Response Test for Stratified Layers of Clay and Sand, 834
  - Seismic Bearing Capacity of Shallow Strip Footings Embedded in Slope, 30
  - Seismic Behavior of Sheathed Cold-Formed Structures: Numerical Study, 1494
  - Seismic Design and Analytical Modeling of Posttensioned Hybrid Coupled Wall Subassemblages, 1539
  - Testing Protocol for Short Links in Eccentrically Braced Frames, 1554
  - Testing Protocol for Short Links in Eccentrically Braced Frames, 1555
  - Testing Protocol for Short Links in Eccentrically Braced Frames, 1555
  - Three-Degree-of-Freedom Rigid Model for Seismic Analysis of Cracked Concrete Gravity Dams, 537
  - Seismic design**
  - Behavior of Steel Double-Channel Built-Up Chords of Special Truss Moment Frames under Reversed Cyclic Bending, 1571
  - Development, Shake Table Testing, and Design of FRP Seismic Restrainers, 152
  - Displacement-Based Design of Supplemental Dampers for Seismic Retrofit of a Framed Structure, 1526
  - Experimental Performance of Link-to-Column Connections in Eccentrically Braced Frames, 1557
  - Experimental Studies on Seismic Behavior of Steel Pile-to-Pile-Cap Connections, 119
  - Fourway: Graphical Tool for Performance-Based Earthquake Engineering, 1564
  - Fragility of Bench-Mounted Equipment Considering Uncertain Parameters, 1527
  - Genetic Algorithm Based Construction-Conscious Minimum Weight Design of Seismic Steel Moment-Resisting Frames, 1444
  - Improved STrength Model for Interior Flat Plate-Column Connections Subject to Unbalanced Moment, 1509
  - New Measure for Severity of Near-Source Seismic Ground Motion, 1636
  - Optimal Seismic Design Considering Risk Altitude, Societal Tolerable Risk Level, and Life Quality Criterion, 1639
  - Optimum Arm Geometry for Ductile Modular Connectors, 1510
  - Performance of Wood Shear Walls Sheathed with FRP-Reinforced OSB Panels, 1453
  - Racking Performance of Tall Unblocked Shear Walls, 1452
  - Rehabilitation of Masonry Walls using Unobtrusive FRP Techniques for Enhanced Out-of-Plane Seismic Resistance, 209
  - Reliability of Shallow Foundations Subjected to Multi-directional Seismic Loading, 842
  - Return Period of Recorded Ground Motion, 1522
  - Reversed-Cyclic Behavior of a Novel Heavy Timber Tube Connection, 1568
  - Seismic Design and Analytical Modeling of Posttensioned Hybrid Coupled Wall Subassemblages, 1539
  - Seismic Design Forces. I: Rigid Nonstructural Components, 1589
  - Seismic Design Forces. II: Flexible Nonstructural Components, 1590
  - Seismic Design Optimization of Steel Building Frameworks, 1466
  - Seismic Site Response for Near-Fault Forward Directivity Ground Motions, 928
  - Seismic Upgrading of RC Buildings by FRP: Full-Scale Tests of a Real Structure, 1337
  - Stability and Ductility of Thin-Walled Circular Steel Columns under Cyclic Bidirectional Loading, 1599
  - Stability Requirements for Beams in Seismic Steel Moment Frames, 1570
  - Testing Protocol for Short Links in Eccentrically Braced Frames, 1554
  - Testing Protocol for Short Links in Eccentrically Braced Frames, 1555

## Seismic design

- Unloading and Reloading Stress – Strain Model for Confined Concrete, 1449
- Seismic effects**
- Adaptive Modal Combination Procedure for Nonlinear Static Analysis of Building Structures, 1609
- Analyses of a Two-Story Unreinforced Masonry Building, 1505
- Assessment of Potential Seismic Damage to Residential Unreinforced Masonry Buildings in Northern Illinois, 1979
- Bayesian State Estimation Method for Nonlinear Systems and its Application to Recorded Seismic Response, 474
- Centrifuge Model Studies of the Seismic Response of Reinforced Soil Slopes, 813
- CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, 873
- Effects of Ground Motion Parameters and Cyclic Degradation Behavior on Collapse Response of Steel Moment-Resisting Frames, 1592
- Effects of Pier and Deck Flexibility on the Seismic Response of Isolated Bridges, 115
- Energy Evaluation for Ramberg — Osgood Hysteretic Model, 529
- Estimating Seismic Demands for Isolation Bearings with Building Overturning Effects, 1548
- Event-Driven Control System for Geographically Distributed Hybrid Simulation, 1446
- Experimental In-Plane Behavior of Tuff Masonry Strengthened with Cementitious Matrix — Grid Composites, 210
- Experimental Stiffness and Seismic Response of Pallet-Type Steel Storage Rack Connectors, 1987
- Frequency-Dependent Amplification of Unsaturated Surface Soil Layer, 827
- Ground Modification and Seismic Mitigation, 2072
- HAZUS Earthquake Loss Estimation Methods, 1927
- Lateral Load Tests on a Two-Story Unreinforced Masonry Building, 1504
- Liquefaction Hazard Mapping—Statistical and Spatial Characterization of Susceptible Units, 844
- Loss Estimation Analysis of Flat-Slab Structures, 1925
- Modal Seismic Control of Building Frames by Artificial Neural Network, 252
- More Efficient Seismic Loading for Multidegrees of Freedom Structures, 1604
- New Approach for Seismic Nonlinear Analysis of Inelastic Framed Structures, 535
- Observations on the Reliability of Alternative Multiple-Mode Pushover Analysis Methods, 1485
- ONDA: Computer Code for Nonlinear Seismic Response Analyses of Soil Deposits, 800
- Optimal Control: Basis for Performance Comparison of Passive and Semiactive Isolation Systems, 504
- Orthogonal Effects in Seismic Analysis of Skewed Bridges, 116
- Property Modification Factors for Seismically Isolated Bridges, 140
- Recommendations for Seismic Evaluation and Retrofit of Low-Rise URM Structures, 1506
- Regenesis, 2029
- Residual Performance of FRP-Retrofitted RC Columns after being Subjected to Cyclic Loading Damage, 219
- Return Period of Recorded Ground Motion, 1522

## 2006 ASCE TRANSACTIONS

- Rotation Response of a Rigid Body under Seismic Excitation, 472
- Seismic Behavior of Reduced Beam Section Moment Connections to Deep Columns, 1474
- Seismic Behavior of Sheathed Cold-Formed Structures: Physical Tests, 1495
- Seismic Evaluation of Steel Moment Frame Buildings Designed using Different  $R$ -Values, 1583
- Seismic Performance of Concrete-Filled FRP Tube Columns for Bridge Substructure, 139
- Seismic Performance of Industrial Facilities Affected by the 1999 Turkey Earthquake, 1367
- Seismic Performance of Steel Girder Bridges with Ductile Cross Frames using Single Angle X Braces, 1471
- Seismic Performance of Steel Girder Bridges with Ductile Cross Frames using Buckling-Restrained Braces, 1472
- Seismic Reliability of Low-Rise Nonsymmetric Wood-frame Buildings, 1513
- Seismic Response and Damage Detection Analyses of an Instrumented Steel Moment-Framed Building, 1591
- Seismic Response of a Composite Landfill Cover, 819
- Seismic Response of High Voltage Electrical Transformer-Bushing Systems, 1467
- Seismic-Resistant Weld-Free Steel Frame Buildings with Mechanical Joints and Hysteretic Dampers, 1525
- Semiactive Fuzzy Control of the Seismic Response of Building Frames, 1519
- Shaking Table Test of a 1:20 Scale High-Rise Building with a Transfer Plate System, 1610
- Site-Specific Validation of Random Vibration Theory-Based Seismic Site Response Analysis, 863
- Small-Strain Behavior of Granular Soils. II: Seismic Response Analyses and Model Evaluation, 877
- Standard Penetration Test-Based Probabilistic and Deterministic Assessment of Seismic Soil Liquefaction Potential, 10
- Stress Reduction Coefficient and Amplification Factor for Seismic Response of Ground, 26
- Structural Weight Optimization of Frames Using Tabu Search. I: Optimization Procedure, 1622
- Structural Weight Optimization of Frames Using Tabu Search. II: Evaluation and Seismic Performance, 1623
- Seismic tests**
- Cyclic Lateral Load Response of Bridge Column-Foundation-Soil Systems in Freezing Conditions, 1611
- Selection**
- Contractor Selection Criteria: Investigation of Opinions of Singapore Construction Practitioners, 387
- Sensitivity analysis**
- Assessing the Hydrologic Performance of Best Management Practices, 1101
- Distribution System Contamination Events: Exposure, Influence, and Sensitivity, 1830
- Efficient Computation of Response Sensitivities for Inelastic Structures, 1464
- Force Identification Based on Sensitivity in Time Domain, 544
- Fuzzy Analysis of Slope-Area Discharge Estimates, 1171

## SUBJECT INDEX

- Innovative Bridge Condition Assessment from Dynamic Response of a Passing Vehicle, 579  
Multilayer Averaged and Moment Equations for One-Dimensional Open-Channel Flows, 1013  
Optimal Control of Open-Channel Flow using Adjoint Sensitivity Analysis, 1055  
Parameter Optimization and Sensitivity Analysis for Disturbed State Constitutive Model, 19  
Postbuckling Analysis of Geometrically Imperfect Conical Shells, 574  
Sensitivity Analyses and Sensitivity Coefficients of Standardized Daily ASCE-Penman-Monteith Equation, 1228  
Sensitivity Analysis of Soil Hydraulic Properties on Subsurface Water Flow in Furrows, 1211  
Slug Test Analysis in Vertical Cutoff Walls. II: Applications, 818  
Structural Damage Detection from Wavelet Coefficient Sensitivity with Model Errors, 547  
Time-Step Dependency of Infiltration Errors in the HSPF Model, 1102
- Sensors**  
Active Control with Optical Fiber Sensors and Neural Networks. I: Theoretical Analysis, 1566  
Active Control with Optical Fiber Sensors and Neural Networks. II: Experimental Verification, 1567  
Application of Cement-Based Piezoelectric Sensors for Monitoring Traffic Flows, 1724  
Automatic Speed Calibration Methodology for Traffic Monitoring Sites, 1666  
Bat Echolocation Interfering with Ultrasonic Sensors, 1069  
Bayesian Belief Networks to Integrate Monitoring Evidence of Water Distribution System Contamination, 1825  
Contaminant Warning in Water Networks: General Mixed-Integer Linear Models for Sensor Location Design, 1824  
Effects of Strain and Damage on Strain-Sensing Ability of Carbon Fiber Cement, 1299  
Electroelastic Response of a Laminated Composite Plate with Piezoelectric Sensors and Actuators, 526  
Electronic Nose — Membrane Interface Probe for Geoenvironmental Site Characterization, 882  
Failure Mechanisms and Deployment Accuracy of Elastic-Memory Composites, 75  
Identification of the Location and Level of Damage in Multiple-Bolted-Joint Structures by PZT Actuator-Sensors, 1469  
Impact of Sensor Detection Limits on Protecting Water Distribution Systems from Contamination Events, 1833  
Sensor Placement in Water Networks: A Stochastic Programming Approach, 1820  
System for In-Service Strain Monitoring of Ordinary Bridges, 170  
Vehicle Level Evaluation of Loop Detectors and the Remote Traffic Microwave Sensor, 1686  
Wavelet-Based Vibration Sensor Data Compression Technique for Civil Infrastructure Condition Monitoring, 275
- Service life**  
In-Service Durability Performance of Water Tanks, 1377  
Life-Cycle Assessment of Office Buildings in Europe and the United States, 1138

## Shake table tests

- Markov-Based Optimization Model for Building Facilities Management, 407  
Probabilistic Service Life Assessment and Maintenance Planning of Concrete Structures, 1521
- Serviceability**  
Critical Review of Deflection Formulas for FRP-RC Members, 206  
Pendulum Tuned Mass Dampers for Floor Vibration Control, 1371  
Vibration Performance of a Large Cantilever Grandstand during an International Football Match, 1385
- Settlement**  
Construction of Concrete-Faced Rockfill Dams with Weak Rocks, 849  
Estimate of Landfill Settlements due to Mechanical and Decompositional Processes, 837  
In Situ Pore Pressure Responses of Native Peat and Soil under Train Load: A Case Study, 904  
Modeling of Settlement in Saturated and Unsaturated Municipal Landfills, 39
- Settling velocity**  
Dynamic Characteristics of Particle Size Distribution in Highway Runoff: Implications for Settling Tank Design, 695  
Experimental Data and Theoretical Analysis of Particle Removal Efficiency in a Novel Hydraulic Separation Unit, 733  
Formulas for Sediment Porosity and Settling Velocity, 1016
- Sewage**  
Formation of Aerobic Granules with Domestic Sewage, 677  
Potential of a Combination of UASB and DHS Reactor as a Novel Sewage Treatment System for Developing Countries: Long-Term Evaluation, 601  
Statistical Modeling of the Serviceability of Sewage Pumps, 1039
- Sewer pipes**  
Hydraulic Elements Chart for Pipe Flow using New Definition of Hydraulic Radius, 1030
- Sewers**  
Deployment of Fiber Optic Networks through Underground Sewers in North America, 1737  
Dynamics of Air Flow in Sewer Conduit Headspace, 1009  
Godunov-Type Solutions for Transient Flows in Sewers, 1010  
Improved Simulation of Flow Regime Transition in Sewers: Two-Component Pressure Approach, 987  
Modeling Ventilation Phenomenon in Sanitary Sewer Systems: A System Theoretic Approach, 1008  
Optimal Layout of Sewer Systems: A Deterministic versus a Stochastic Model, 1018  
Statistical Modeling of the Serviceability of Sewage Pumps, 1039  
Validation of Shoring Made of HDPE Pipe or CGS Pipe Normally Used for Culverts and Sewers, 1974
- Shafts**  
Experimental Study of Flow in a Vortex Drop Shaft, 937
- Shake table tests**  
Comparison of Tests of a Nonlinear Structure using a Shake Table and the EFT Method, 1584

- Development, Shake Table Testing, and Design of FRP Seismic Restrainers, 152
- Effects of Connection Fractures on Global Behavior of Steel Moment Frames Subjected to Earthquakes, 1447
- Experimental Stiffness and Seismic Response of Parallel-Type Steel Storage Rack Connectors, 1987
- Internet-Enabled Remote Observation and Control of a Shake Table Experiment, 271
- Rotation Response of a Rigid Body under Seismic Excitation, 472
- Shaking Table Test of a 1:20 Scale High-Rise Building with a Transfer Plate System, 1610
- Shallow foundations**
- Reliability of Shallow Foundations Subjected to Multidirectional Seismic Loading, 842
  - Resistance Factors for Use in Shallow Foundation LRFD, 889
  - Undrained Bearing Capacity of Square and Rectangular Footings, 27
- Shallow water**
- 2D Shallow-Water Model using Unstructured Finite-Volumes Methods, 958
  - Divergence Form for Bed Slope Source Term in Shallow Water Equations, 997
  - Entrainment Properties of Plane Surface-Jets in Shallow Current, 967
  - Impact of Limiters on Accuracy of High-Resolution Flow and Transport Models, 443
  - Limitations of Depth-Averaged Modeling for Shallow Waves, 1004
  - Modeling 3D Supercritical Flow with Extended Shallow-Water Approach, 1024
  - One-Dimensional Model of Shallow Water Surface Waves Generated by Landslides, 977
  - Performance of Parallel Implementations of an Explicit Finite-Volume Shallow-Water Model, 255
  - Refinement Indicator for Mesh Adaption in Shallow-Water Modeling, 1015
  - Unstructured Grid Finite-Volume Algorithm for Shallow-Water Flow and Scalar Transport with Wetting and Drying, 968
  - Well-Balanced Finite-Volume Model for Long-Wave Runup, 1866
- Shape**
- Bearing Capacity of Square and Circular Footings on a Finite Layer of Granular Soil Underlain by a Rigid Base, 916
  - Effect of Coarse Aggregate Morphology on Permanent Deformation Behavior of Hot Mix Asphalt, 1726
  - Form-Finding of Nonregular Tensegrity Systems, 1580
  - Formulas for Sediment Porosity and Settling Velocity, 1016
  - Multiple Optimum Size/Shape/Topology Designs for Skeletal Structures using a Genetic Algorithm, 1552
  - Particle Shape Effects on Packing Density, Stiffness, and Strength: Natural and Crushed Sands, 832
  - Selection of Physical and Geometrical Properties for the Confinement of Vibrations in Nonhomogeneous Beams, 72
  - Shape Selection for Lattice Structures, 1608
- Shape memory effect**
- Failure Mechanisms and Deployment Accuracy of Elastic-Memory Composites, 75
- Shear**
- Behavior of a Fiber-Reinforced Bentonite at Large Shear Displacements, 918
  - Behavior of Corrugated Web I-Girders under In-Plane Loads, 517
  - CFRP Strengthening for Punching Shear of Interior Slab — Column Connections, 230
  - Experimental Evaluation of Posttensioned Hybrid Coupled Wall Subassemblies, 1538
  - Failure Behavior of Spruce Wood under Bending-Shear Combined Stress Field, 1271
  - High-Cycle Fatigue of Diagonally Cracked Reinforced Concrete Bridge Girders: Field Tests, 173
  - Hyperelasticity Model for Finite-Element Analysis of Natural and High Damping Rubbers in Compression and Shear, 440
  - Microbially Induced Cementation to Control Sand Response to Undrained Shear, 905
  - Microscopic Evaluation of Strain Distribution in Granular Materials during Shear, 785
  - Peel and Shear Fracture Characterization of Debonding in FRP Plated Concrete Affected by Moisture, 192
  - Properties of Asphalt Concrete Layer Interfaces, 1312
  - Seismic Design and Analytical Modeling of Posttensioned Hybrid Coupled Wall Subassemblies, 1539
  - Shear Live-Load Distribution Factors for I-Girder Bridges, 124
  - Shear-Flexural Buckling of Cantilever Columns under Uniformly Distributed Load, 557
  - Strength and Behavior of Cold-Formed Steel Z-Sections Subjected to Major Axis Bending, 1600
- Shear deformation**
- Approximate Series Solution for Analysis of FRP Composite Highway Bridges, 225
  - Behavior of Reinforced Concrete Column — Steel Beam Roof Level T-Connections under Displacement Reversals, 1540
  - Buckling of Multiwalled Carbon Nanotubes using Timoshenko Beam Theory, 534
  - Exact Solution of Out-of-Plane Problems of an Arch with Varying Curvature and Cross Section, 494
  - Fracture Analysis of Shear Deformable Bi-Material Interface, 466
  - Local-Plate and Distortional Postbuckling Behavior of Cold-Formed Steel Lipped Channel Columns with Intermediated Stiffeners, 1491
  - Shear Localization Due to Liquefaction-Induced Void Redistribution in a Layered Infinite Slope, 897
  - Shear Response of Concrete-Filled FRP Composite, 1533
- Shear distribution**
- Live-Load Distribution Factors for Prestressed Concrete, Spread Box-Girder Bridge, 160
- Shear failure**
- Capacity Evaluation of Exterior Sacrificial Shear Keys of Bridge Abutments, 158
  - Continuous Interface Elements Subject to Large Shear Deformations, 21
  - Empirical Punching Shear Failure Theory for Oriented Strand Boards: Preliminary Study, 1487
  - Improved Strength Model for Interior Flat Plate-Column Connections Subject to Unbalanced Moment, 1509

## SUBJECT INDEX

### Shear flow

Partial Interaction Shear Flow Forces in Continuous Composite Steel-Concrete Beams, 1460

### Shear lag

Transverse Analysis of Strutted Box Girder Bridges, 107

### Shear modulus

Degradation of Sands due to Combined Sinusoidal Loading, 930

Influence of Temperature and Pressure on the Dynamic Properties of Rubber-Modified Asphalt Concrete, 1275

Small-Strain Behavior of Granular Soils. I: Model for Cemented and Uncemented Sands and Gravels, 876

Small-Strain Shear Moduli of Chemically Stabilized Sulfate-Bearing Cohesive Soils, 808

### Shear resistance

Behavior of Reinforced Concrete Column — Steel Beam Roof Level T-Connections under Displacement Reversals, 1540

Shear Resistance of FRP RC Beams: Experimental Study, 235

Shear Response of Concrete-Filled FRP Composite, 1533

### Shear strain

Online Earthquake Response Test for Stratified Layers of Clay and Sand, 834

Threshold Shear Strain for Cyclic Pore-Water Pressure in Cohesive Soils, 900

### Shear strength

Capacity Evaluation of Exterior Sacrificial Shear Keys of Bridge Abutments, 158

Comparison in Undrained Shear Strength between Undisturbed and Remolded Ariake Clays, 806

Computational Fluid Dynamics Analysis of Flow in a Straight Flume for Sediment Erodibility Testing, 1899

Critical Inclination of Compression Struts in Concrete Beams, 1508

Drained and Undrained Strength Interpretation for Low-Plasticity Silts, 802

Effectiveness of GFRP Sheets for Shear Strengthening of Timber, 237

Energy-Based Modeling Approach for Debonding of FRP Plate from Concrete Substrate, 492

Experimental In-Plane Shear Strength Investigation of Reinforced Concrete Masonry Walls, 1478

Experimental Study of Macro- and Microbehavior of Natural Diatomite, 833

Flexural and Shear Strength of Composite Lintels in Glass-Fiber-Reinforced Gypsum Wall Constructions, 1306

Improved Strength Model for Interior Flat Plate-Column Connections Subject to Unbalanced Moment, 1509

Interpretation of Impact Penetration Measurements in Soft Clays, 848

Laboratory Simulation of Field Sampling: Comparison with Ideal Sampling and Field Data, 810

Limitations in the Back-Analysis of Strength from Failures, 828

Mars Soil Mechanical Properties and Suitability of Mars Soil Simulants, 73

### Shear walls

Mechanics of Web Panel Postbuckling Behavior in Shear, 1595

Reliability of Shallow Foundations Subjected to Multi-directional Seismic Loading, 842

Shear Behavior of Corrugated Web Bridge Girders, 1457

Shear Resistance of FRP RC Beams: Experimental Study, 235

Shear Strength and Pore-Water Pressure Characteristics during Constant Water Content Triaxial Tests, 815

Size Effect on Shear Strength of Deep Beams: Investigating with Strut-and-Tie Model, 1507

Stabilization of Arsenic-Bearing Sludges using Lime, 1276

Suction Stress Characteristic Curve for Unsaturated Soil, 791

Unsaturated Soils 2006, 2096

Volume Change Behaviors of Expansive Soils Stabilized with Recycled Ashes and Fibers, 1292

### Shear stress

Computational Fluid Dynamics Analysis of Flow in a Straight Flume for Sediment Erodibility Testing, 1899

Critical Bed Shear Stress for Unisize Sediment, 949

Data Interpretation for In Situ Measurements of Cohesive Sediment Erosion, 990

Equivalent Roughness Height for Plane Bed under Steady Flow, 1048

Errors in the Bed Shear Stress as Estimated from Vertical Velocity Profile, 1220

Explicit Formulation of the Shields Diagram for Incipient Motion of Sediment, 1041

Flow-Induced Failure of Cable-Tied Blocks, 964

Hydrodynamic Behavior of Asymmetric Oscillatory Boundary Layers at Low Reynolds Numbers, 1040

Investigation of Boundary Shear Stress and Pollutant Detachment from Impervious Surface during Simulated Urban Storm Runoff, 592

Large-Eddy Simulation of High Reynolds Number Turbulent Flow Past a Square Cylinder, 468

Particle Image Velocity Measurements of Undular and Hydraulic Jumps, 1060

Performance Implications of Imperfectly Plastic Material in Metallic Structures with Nonmetallic Reinforcement, 1461

Probability Density Function of Instantaneous Drag Forces and Shear Stresses on a Bed, 1050

Three-Parameter Model for Debonding of FRP Plate from Concrete Substrate, 485

Turbulent Boundary Layer Flows above a Porous Surface Subject to Flow Injection, 553

### Shear tests

Capacity Evaluation of Exterior Sacrificial Shear Keys of Bridge Abutments, 158

Double Strain Softening and Diagonally Crossing Shear Bands of Sand in Drained Triaxial Tests, 57

Principal Deviatoric Strain Increment Ratios for Sand having Inherent Transverse Isotropy, 47

Threshold Shear Strain for Cyclic Pore-Water Pressure in Cohesive Soils, 900

### Shear walls

Blast Assessment of Load-Bearing Reinforced Concrete Shear Walls, 1982

## **Shear walls**

- Cold-Formed Steel Frame Shear Walls Utilizing Structural Adhesives, 1497  
Damage and Damage Prediction for Wood Shearwalls Subjected to Simulated Earthquake Loads, 1381  
Design Criteria for Seam and Sheet-to-Framing Connections of Cold-Formed Steel Shear Panels, 1496  
Effects of Vertical Load and Hold-Down Anchors on the Cyclic Response of Wood Framed Shear Walls, 1579  
Lateral Stiffness of Shear Walls with Openings, 1621  
Learning Seismic Design from the Earthquake Itself, 1986  
Midply Wood Shear Wall System: Concept and Performance in Static and Cyclic Testing, 1578  
Multilaminate Macromodel for Concrete Masonry: Formulation and Verification, 1635  
Performance of Wood Shear Walls Sheathed with FRP-Reinforced OSB Panels, 1453  
Racking Performance of Tall Unblocked Shear Walls, 1452  
Seismic Behavior of Sheathed Cold-Formed Structures: Numerical Study, 1494  
Seismic Behavior of Sheathed Cold-Formed Structures: Physical Tests, 1495

## **Shear waves**

- Correlation between Cyclic Resistance Ratios of Intact and Reconstituted Offshore Saturated Sands and Silts with the Same Shear Wave Velocity, 924  
Influence of Nonplastic Fines on Shear Wave Velocity-Based Assessment of Liquefaction, 878  
On the Comparison of Timoshenko and Shear Models in Beam Dynamics, 554  
Spatial and Temporal Characteristics of Transient Extreme Wave Profiles on Depth-Varying Currents, 541

## **Sheet flow**

- Equivalent Roughness Height for Plane Bed under Steady Flow, 1048

## **Sheet piles**

- Characterization of a Pultruded FRP Sheet Pile for Waterfront Retaining Structures, 1333  
Moment Capacities and Deflection Limits of PFRP Sheet Piles, 241

## **Sheets**

- Comparison of Roles of FRP Sheets, Stirrups, and Steel Fibers in Confining Bond Critical Regions, 222  
Cyclic Behavior of RC Beams Strengthened with Carbon Fiber Sheets Bonded by Inorganic Matrix, 1264  
Effectiveness of GFRP Sheets for Shear Strengthening of Timber, 237  
Evaluation of Bending Strength of RC Beams Strengthened with FRP Sheets, 220  
Strengthening of Interior Slab — Column Connections using a Combination of FRP Sheets and Steel Bolts, 229  
Structural Retrofitting of Deteriorated Concrete Lighting Poles using FRP Sheets in Wet Layup — Field Application, 211

## **Shell structures**

- Determination of Stress Intensity Factors for a Cracked Shell under Bending with Improved Shell Theories, 60  
Membrane-Based Forms for Innovative FRP Bridge Systems through Structural Optimization, 234

## **2006 ASCE TRANSACTIONS**

- Nine-Node Resultant-Stress Shell Element for Free Vibration and Large Deflection of Composite Laminates, 69

## **Shells**

- Analysis of Finite Strain Anisotropic Elastoplastic Fracture in Thin Plates and Shells, 81  
Axisymmetric Nonlinear Stability of a Shallow Conical Shell with a Spherical Cap of Arbitrary Variable Shell Thickness, 555  
Elastic Buckling of Laminated Conical Shells Using a Hierarchical High-Fidelity Analysis Procedure, 575  
Postbuckling Analysis of Geometrically Imperfect Conical Shells, 574

## **Ships**

- Experimental Study on the Hydrodynamics of a Floating Production, Storage, and Offloading System, 1861  
Generic Design of V-Shape and Vane-Type Breakwaters to Reduce Green Water Load Effects on Deck Structures and Containers of Ships: Case Study, 1860

## **Shock waves**

- Modeling 3D Supercritical Flow with Extended Shallow-Water Approach, 1024

## **Shopping centers**

- Market Fresh, 2019

- Temporal Variation in Consumer Spatial Behavior in Shopping Streets, 1792

## **Shore protection**

- Effects of Nutrient Source and Supply on Crude Oil Biodegradation in Continuous-Flow Beach Microcosms, 591

## **Shoreline changes**

- Discriminating Modes of Shoreline Response to Offshore-Detached Structures, 1873

## **Shotcrete**

- Shotcrete for Underground Support X, 2086

## **Shrinkage**

- Cracking Tendency of Self-Compacting Concrete Subjected to Restrained Shrinkage: Experimental Study and Modeling, 1266

- Creep Buckling of Shallow Parabolic Concrete Arches, 1601

- Long-Term Behavior of Precast Segmental Cantilever Bridges, 137

- Long-Term Behavior of Timber-Concrete Composite Beams. I: Finite Element Modeling and Validation, 1440

- Long-Term Behavior of Timber-Concrete Composite Beams. II: Numerical Analysis and Simplified Evaluation, 1441

- Predictive Model for the Water Retention Curve of Deformable Clayey Soils, 881

- Preflex Beams: A Method of Calculation of Creep and Shrinkage Effects, 108

- Service-Stage Analysis of Curved Composite Steel-Concrete Bridge Beams, 1629

- Volume Change Behaviors of Expansive Soils Stabilized with Recycled Ashes and Fibers, 1292

## **Silica**

- Electrocoagulation of Silica Nanoparticles in Wafer Polishing Wastewater by a Multichannel Flow Reactor: A Kinetic Study, 772

## SUBJECT INDEX

- Role of an Amorphous Silica in Portland Cement Concrete, 1348  
Treatment of Polishing Wastewater from Semiconductor Manufacturer by Dispersed Air Flotation, 588
- Silos**  
Design Analysis for Buckling of Tanks and Silos, 1443  
Granular Material Silos under Dynamic Excitation: Numerical Simulation and Experimental Validation, 1594  
Influence of Hopper Eccentricity on Discharge of Cylindrical Mass Flow Silos with Rigid Walls, 542
- Silts**  
Correlation between Cyclic Resistance Ratios of Intact and Reconstituted Offshore Saturated Sands and Silts with the Same Shear Wave Velocity, 924  
Drained and Undrained Strength Interpretation for Low-Plasticity Silts, 802  
Liquefaction, Cyclic Mobility, and Failure of Silt, 845  
Liquefaction Susceptibility Criteria for Silts and Clays, 908  
Practical Model of Frost Heave in Clay, 786
- Similitude**  
Utilizing Clustering Techniques in Estimating Traffic Data Input for Pavement Design, 1759
- Simulation**  
3D Simulation of Combining Flows in 90° Rectangular Closed Conduits, 954  
Actuated Signal Operations of Congested Diamond Interchanges, 1750  
Alternative Formulations for Structural Optimization: An Evaluation Using Frames, 1624  
ANN and Fuzzy Logic Models for Simulating Event-Based Rainfall-Runoff, 1064  
Application of Lean Concepts and Simulation Analysis to Improve Efficiency of Drainage Operations Maintenance Crews, 317  
Assessment of Dynamic Measurement Accuracy of GPS in Three Directions, 1656  
Automated Statistical Analysis in Stochastic Project Scheduling Simulation, 315  
Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Theory, 1186  
Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Simulation Results, 1187  
Bayesian State Estimation Method for Nonlinear Systems and its Application to Recorded Seismic Response, 474  
Bayesian Updating Application into Simulation in the North Edmonton Sanitary Trunk Tunnel Project, 376  
Blind Test Results for Nondestructive Damage Detection in a Steel Frame, 1520  
Case Study: Numerical Simulations of Debris Flow below Stožec, Slovenia, 943  
Combination Subsurface Irrigation and Drainage Systems in North-Central South Dakota, 1169  
Combined Hydraulic and Black-Box Models for Flood Forecasting in Urban Drainage Systems, 1131  
Comparison of Two Model Concepts for Simulation of Nitrogen Removal at a Full-Scale Biological Nutrient Removal Pilot Plant, 636  
Computational Fluid Dynamics Simulation of Concentration Distributions from a Point Source in the Urban Street Canyons, 67
- Coupled Surge-Heave Motions of a Moored System. II: Stochastic Analysis and Simulations, 502  
Crashworthiness of Motor Vehicle and Traffic Light Pole in Frontal Collisions, 1743  
Degradation of a Granular Base under a Flexible Pavement: DEM Simulation, 56  
Determination of Point Displacements in the Geodetic Network, 1648  
Deterministic-Based Model of Slow Sand Filtration. I: Model Development, 697  
Deterministic-Based Model of Slow Sand Filtration. II: Model Application, 698  
Development of an Optimization Methodology for Adaptive Traffic Sign Control at Diamond Interchanges, 1732  
Diagonal Cartesian Method for the Numerical Simulation of Flow and Suspended Sediment Transport over Complex Boundaries, 1053  
Domain Decomposition Method for Calculating the Failure Probability of Linear Dynamic Systems Subjected to Gaussian Stochastic Loads, 82
- Economically Driven Simulation of Regional Water Systems: Friant-Kern, California, 1849  
Effect of Envelope on Residential Cooling Load Coupled with Use of Solar/PV Panels, 428  
Effect of Forecast-Based Pricing on Irrigated Agriculture: A Simulation, 1843  
Effectiveness of Learning Transportation Network Growth through Simulation, 1410  
Evaluating the Impact of Vessel-Traffic Interference on Container Terminal Capacity, 1862  
Event-Driven Control System for Geographically Distributed Hybrid Simulation, 1446  
Experimental Analysis and Numerical Simulations of Waves and Current Flows around Low-Crested Rubble-Mound Structures, 1856  
Experimental Study and 3D Numerical Simulations for a Free-Overflow Spillway, 1022  
Finite-Element Crash Test Simulation of New York Portable Concrete Barrier with I-Shaped Connector, 1481  
Formation Processes and Configuration of Channel-Flow Dominated Alluvial Deltas by Numerical Simulation, 1012  
Geomechanics II — Testing, Modeling, and Simulation, 2069  
Granular Material Silos under Dynamic Excitation: Numerical Simulation and Experimental Validation, 1594  
Identification of Contaminant Sources in Water Distribution Systems using Simulation – Optimization Method: Case Study, 1827  
Improved Simulation of Flow Regime Transition in Sewers: Two-Component Pressure Approach, 987  
Incomplete Information Analysis for the Origin-Destination Survey Table, 1794  
Influence of Water on Alkali-Silica Reaction: Experimental Study and Numerical Simulations, 1328  
Laboratory Simulation of Field Sampling: Comparison with Ideal Sampling and Field Data, 810  
Lagrangian Approach to Structural Collapse Simulation, 516  
Large-Eddy Simulation of High Reynolds Number Turbulent Flow Past a Square Cylinder, 468  
Large-Eddy Simulation of Turbulent Flow over a Fixed Two-Dimensional Dune, 996

## Simulation

## Simulation

- Lessons Learned for Ground Movements and Soil Stabilization from the Boston Central Artery, 868  
Mars Soil Mechanical Properties and Suitability of Mars Soil Simulants, 73  
Model for Analysis of Factors Affecting Construction Schedule in Highway Work Zones, 1717  
Modeling and Analyzing the Impact of Technology on Data Capture and Transfer Processes at Construction Sites: A Case Study, 401  
Modeling Driver Visual Demand on Three-Dimensional Highway Alignments, 1700  
Modified K-NN Model for Stochastic Streamflow Simulation, 1110  
Multi-Agent Framework for General-Purpose Situational Simulations in the Construction Management Domain, 261  
Multilayer Averaged and Moment Equations for One-Dimensional Open-Channel Flows, 1013  
Multivariate Simulation and Multimodal Dependence Modeling of Vehicle Axle Weights with Copulas, 1767  
Neural Network-Wavelet Microsimulation Model for Delay and Queue Length Estimation at Freeway Work Zones, 1697  
Nondestructive Dynamic Evaluation of a Concrete Reaction Wall — Numerical and Experimental Studies, 1389  
Numerical Simulation of Obstructed Round Buoyant Jets in a Static Uniform Ambient, 974  
Numerical Simulation of Solitary Waves using Velocity-Vorticity Formulation of Navier-Stokes Equations, 456  
Numerical Simulations of Dynamic Instability of Elastic-Plastic Beams, 461  
Observation and Simulation of Floodwater Intrusion and Sedimentation in the Shichikashuku Reservoir, 1020  
Operational Optimization and Mass Balances in a Two-Stage MBR Treating High Strength Pet Food Wastewater, 691  
Optimal Design in the Presence of Modeling Uncertainties, 77  
Optimal Pumping from Skimming Wells, 1118  
Optimal Seismic Design Considering Risk Attitude, Societal Tolerable Risk Level, and Life Quality Criterion, 1639  
Particle Swarm Optimization-Supported Simulation for Construction Operations, 413  
Potential Computational Benefits of Geometric, Kinematic, and Behavioral Downsampling of Microscopic Traffic Network Simulation, 277  
Probabilistic Stability Analyses of Embankments Based on Finite-Element Method, 911  
Refinement Indicator for Mesh Adaption in Shallow-Water Modeling, 1015  
Reliability and Stability Buffering Approach: Focusing on the Issues of Errors and Changes in Concurrent Design and Construction Projects, 333  
Robust Mobile Ad Hoc Space for Collaboration to Support Disaster Relief Efforts Involving Critical Physical Infrastructure, 247  
Simulated Annealing — Genetic Algorithm for Transit Network Optimization, 251  
Simulation of Crack Propagation in Asphalt Concrete using an Intrinsic Cohesive Zone Model, 563

## 2006 ASCE TRANSACTIONS

- Simulation of Lead Ions Adsorption onto the Iron-Coated Medium: Dependent on Temperature and pH, 1942  
Simulation of Multidimensional Binary Random Fields with Application to Modeling of Two-Phase Random Media, 496  
Simultaneous and Sequential Photosynthesis of TCE and PCE, 586  
Simultaneous Removal of Carbon and Nitrogen from Swine Wastewater using an Immobilized-Cell Reactor, 630  
Simultaneous Removal of Phenol and Nitrate in an Anaerobic Bioreactor, 722  
Sludge Blanket Height and Flow Pattern in UASB Reactors: Temperature Effects, 699  
Stimulating Construction Innovation in Singapore through the National System of Innovation, 394  
Stochastic Streamflow Simulation using SAMS-2003, 1177  
Supply Chain Simulation Modeling for the Manufactured Housing Industry, 1797  
Technology Evaluation of Hydrogen Light-Duty Vehicles, 663  
Temporal Thermal Behavior and Damage Simulations of FRP Deck, 148  
Three-Dimensional Modeling of the Ruwais Coastal Area of United Arab Emirates, 1902  
Two-Level Integrated Optimization System for Planning of Emergency Evacuation, 1751  
Uncertainty Analysis for Coupled Waterhed and Water Quality Modeling Systems, 1838  
Using a Simulated Annealing Algorithm to Solve the Transit Route Network Design Problem, 1676  
Using Radar Data to Partition Precipitation into Rain and Snow in a Hydrologic Model, 1093  
UTW Behavior on Asphalt Pavements Tested with HWLS, 1760  
Validation of a Large-Eddy Simulation Model to Simulate Flow in Pump Intakes of Realistic Geometry, 1062  
Validation of a Model for Predicting Schedule Changes in Highway Work Zones — Case Studies, 1733  
Vehicle Collision with Bridge Piers, 1  
Virtual Shop Model for Experimental Planning of Steel Fabrication Projects, 281  
Water Exchange and Sedimentation in an Estuarine Tidal Harbor using Three-Dimensional Simulation, 1893  
Watershed-Scale Impacts of Forest Buffers on Water Quality and Runoff in Urbanizing Environment, 1815  
Web-Enabled System Dynamics Model for Error and Change Management on Concurrent Design and Construction Projects, 273

### Simulation models

- Analytical Urban Storm Water Quality Models Based on Pollutant Buildup and Washoff Processes, 734  
Application Framework for Mapping and Simulation of Waste Handling Processes in Construction, 408  
Explicit Integration Method for Extended-Period Simulation of Water Distribution Systems, 969  
Geotechnical Physical Modeling for Education: Learning Theory Approach, 1431  
Identification of Groundwater Pollution Sources using GA-Based Linked Simulation Optimization Model, 1081

## SUBJECT INDEX

- Improved Compartmental Modeling and Application to Three-Phase Contaminant Transport in Unsaturated Porous Media, 606
- Plastic Hinge Integration Methods for Force-Based Beam — Column Elements, 1462
- Regional Salinity Modeling for Conjunctive Water Use Planning in Kheri Command, 1207
- Transverse Pavement Grooving against Hydroplaning. I: Simulation Model, 1709
- Singapore**
- Algorithm Fusion for Detecting Incidents on Singapore's Central Expressway, 1696
- Contractor Selection Criteria: Investigation of Opinions of Singapore Construction Practitioners, 387
- Incorporating Contractual Incentives to Facilitate Relational Contracting, 1412
- Optimal Siting of Fire Stations using GIS and ANT Algorithm, 286
- Stimulating Construction Innovation in Singapore through the National System of Innovation, 394
- Site evaluation**
- Borrowing Residential Trip Generation Rates, 1674
- Computer-Aided Site Layout Planning, 302
- Frequency-Dependent Amplification of Unsaturated Surface Soil Layer, 827
- Minimizing Construction-Related Hazards in Airport Expansion Projects, 344
- Natural Attenuation Assessment using Mineral Data, 1968
- Optimizing Airport Construction Site Layouts to Minimize Wildlife Hazards, 1257
- Site and Geomaterial Characterization, 2087
- Site investigation**
- Electronic Nose — Membrane Interface Probe for Geoenvironmental Site Characterization, 882
- Protection Measures against Mine Subsidence Taken at a Building Site, 1278
- Site and Geomaterial Characterization, 2087
- Site preparation, construction**
- Computer-Aided Site Layout Planning, 302
- Minimizing Construction-Related Hazards in Airport Expansion Projects, 344
- Site selection**
- Strategic Decision Analysis for Selection of Landfill Sites, 1652
- Size**
- Multiple Optimum Size/Shape/Topology Designs for Skeletal Structures using a Genetic Algorithm, 1552
- Particle Shape Effects on Packing Density, Stiffness, and Strength: Natural and Crushed Sands, 832
- Size effect**
- Effect of Test Piece Size on Rheological Behavior of Wood Composites, 518
- Fracture Toughness of Wood Fiber Gypsum Panels from Size Effect Law, 507
- Size Effect on Shear Strength of Deep Beams: Investigating with Strut-and-Tie Model, 1507
- Size Effect on Strength of Quasi-Brittle Structures with Reentrant Corners Symmetrically Loaded in Tension, 558
- Size Effects and the Dynamic Response of Plain Concrete, 1315
- Slope stability**
- Study on the Average Fracture Energy for Crack Propagation in Concrete, 1357
- Skewed structures**
- Girder Differential Deflection and Distortion-Induced Fatigue in Skewed Steel Bridges, 121
- Skin friction**
- Drag Force on Single Piles in Clay Subjected to Surcharge Loading, 20
- Slabs**
- Design Charts for Helicoidal Stair Slabs with Landing at Midspan, 1470
- Determination of Nonlinear Softening Behavior at FRP Composite/Concrete Interface, 484
- Experimental Evaluation of Reduced Beam Section Connections to Deep Columns, 1473
- Fatigue Analysis of RC Slabs and Repaired RC Slabs Based on Crack Bridging Degradation Concept, 1532
- Forces on Plunge Pool Slabs: Influence of Joints Location and Width, 936
- Loss Estimation Analysis of Flat-Slab Structures, 1925
- Reduction of Vibrations due to Foundation Slabs, 825
- Seismic Behavior of Reduced Beam Section Moment Connections to Deep Columns, 1474
- Stiffness Assessment through Modal Analysis of an RC Slab Bridge before and after Strengthening, 162
- Strengthening of Interior Slab — Column Connections using a Combination of FRP Sheets and Steel Bolts, 229
- Slag**
- Assessing the Carbonation Behavior of Cementitious Materials, 1351
- Metallic Characterization of Foundry By-Products per Waste Streams and Leaching Protocols, 665
- Modeling Compressive Strength Development in Florida Concrete, 1362
- Soil Stabilization using Basic Oxygen Steel Slag Fines, 1285
- Slenderness ratio**
- Nonlinear EI Equation for Slender Composite Columns Bending about the Minor Axis, 1596
- Stability Requirements for Beams in Seismic Steel Moment Frames, 1570
- Sliding**
- Plane Impulse Waves in Reservoirs, 1888
- Three-Degree-of-Freedom Rigid Model for Seismic Analysis of Cracked Concrete Gravity Dams, 537
- Slope stability**
- Case History of Geosynthetic Reinforced Segmental Retaining Wall Failure, 921
- Centrifuge Model Studies of the Seismic Response of Reinforced Soil Slopes, 813
- Estimating Slope Stability Reduction due to Rain Infiltration Mounding, 890
- Experimental and Theoretical Investigations on Geocell-Supported Embankments, 14
- Failure and Dilatancy Properties of Sand at Relatively Low Stresses, 582
- General Analytical Framework for Design of Flexible Reinforced Earth Structures, 909
- GIS-Based Implementation of Three-Dimensional Limit Equilibrium Approach of Slope Stability, 839

## Slope stability

Material Spatial Variability and Slope Stability for Weak Rock Masses, 796

### Slopes

Analytical Study of Turbulent Pollutant Dispersion near a Low Hill, 444

Antiplane (SH) Waves Diffraction by a Semicircular Cylindrical Hill Revisited: An Improved Analytic Wave Series Solution, 550

Considerations from the Design of Intercepting Drainage for Collecting Water from Seep Areas, 1231

Cross-Shore Internal Waves in Zanpa Coastal Region of Okinawa Island, 1858

Design of Rock Protection to Prevent Erosion by Water Flows Down Steep Slopes, 1044

Disturbance Caused by Bed Sills on the Slopes of Steep Streams, 1052

Divergence Form for Bed Slope Source Term in Shallow Water Equations, 997

Flow Resistance of Rock Chutes with Protruding Boulders, 986

Fuzzy Analysis of Slope-Area Discharge Estimates, 1171

Hydraulic Analysis and Direct Design of Multiple Outlets Pipelines Laid on Flat and Sloping Lands, 1226

Hydraulic Jumps in Sloping Channels: Sequent Depth Ratio, 1037

Hydrological Evaluation of Septic Disposal Field Design in Sloping Terrains, 731

Lateral Resistance of Single Pile Located near Geosynthetic Reinforced Slope, 901

Seismic Bearing Capacity of Shallow Strip Footings Embedded in Slope, 30

Shear Localization Due to Liquefaction-Induced Void Redistribution in a Layered Infinite Slope, 897

Strength Loss and Localization at Silt Interlayers in Slopes of Liquefied Sand, 7

Transformation, Attenuation, Setup, and Undertow of Internal Waves on a Gentle Slope, 1901

### Sludge

Combined Removal of Carbon and Nitrogen in an Integrated UASB-Jet Loop Reactor Bioreactor System, 669

Enhancement of Anaerobic Digestion of Excess Municipal Sludge with Thermal and/or Oxidative Treatment, 670

Enhancement of Denitrification in Upflow Sludge Bed Reactors with Sludge Wasting, 635

Enhancing Bioremediation with Enzymatic Processes: A Review, 1947

Fate and Modeling of Pentachlorophenol Degradation in a Laboratory-Scale Anaerobic Sludge Digester, 689

Formation of Aerobic Granules with Domestic Sewage, 677

Microstructure and Compactive Instabilities of a Stabilized Residue, 1290

Operational Optimization and Mass Balances in a Two-Stage MBR Treating High Strength Pet Food Wastewater, 691

Respirometric Assessment of Primary Sludge Fermentation Products, 590

Simple Rule-Based Algorithm for Optimizing Volatile Fatty Acids Production in Primary Sludge Fermentation Schemes, 747

Sludge Blanket Height and Flow Pattern in UASB Reactors: Temperature Effects, 699

## 2006 ASCE TRANSACTIONS

Stabilization of Arsenic-Bearing Sludges using Lime, 1276

Thermochemical Analysis in the Presintering Phase of Aggregates from Sludge-Marine Clay Mixes, 1267

### Slurries

High-Carbon Fly Ash in Manufacturing Conductive CLSM and Concrete, 1347

Influence of Torque on Lateral Capacity of Drilled Shafts in Sands, 820

Stability of Long Trenches in Sand Supported by Bentonite-Water Slurry, 4

### Slurry trenches

Stability of Long Trenches in Sand Supported by Bentonite-Water Slurry, 4

### Slurry walls

Membrane Behavior of Two Backfills from Field-Constructed Soil-Bentonite Cutoff Walls, 892

### Smoke

Use of Inorganic Polymer to Improve the Fire Response of Balsa Sandwich Structures, 1303

### Snow

Frequency Distributions of Heavy Snowfall from Snowstorms in the United States, 1114

Handling of Urban Snow with Regard to Snow Quality, 612

Using Radar Data to Partition Precipitation into Rain and Snow in a Hydrologic Model, 1093

### Snow cover

Monitoring Snow-Cover Depletion by Coupling Satellite Imagery with a Distributed Snowmelt Model, 1808

### Snow loads

Design of Window Glass for Lateral Pressures, 95

Frequency Analysis of Ground Snow Data and Production of the Snow Load Map using Geographic Information System for the Eastern Black Sea Region of Turkey, 1553

Increased Snow Loads and Wind Actions on Existing Buildings: Reliability of the Norwegian Building Stock, 1618

### Snowmelt

Gridded Snowmelt and Rainfall-Runoff CWMS Hydrologic Modeling of the Red River of the North Basin, 1080

Handling of Urban Snow with Regard to Snow Quality, 612

Monitoring Snow-Cover Depletion by Coupling Satellite Imagery with a Distributed Snowmelt Model, 1808

### Snowpacks

Handling of Urban Snow with Regard to Snow Quality, 612

### Snowstorms

Frequency Distributions of Heavy Snowfall from Snowstorms in the United States, 1114

### Social factors

Exploratory Study of Knowledge Sharing in Contracting Companies: A Sociotechnical Perspective, 380

Legal Issues Associated with Emergent Actor Roles in Innovative U.K. Procurement: Prime Contracting Cast Study, 1413

## SUBJECT INDEX

### Sodium

Feasibility of Using Natural Zeolites to Remove Sodium from Coal Bed Methane-Produced Water, 771

Modeling the Sorption of Fluoride onto Alumina, 608

### Soft soils

Bearing Capacity of Piles Rafts on Soft Clay Soils, 927

Experimental Evaluation of Engineering Behavior of Soft Bangkok Clay under Elevated Temperature, 862

Finite-Element Parametric Study of the Consolidation Behavior of a Trial Embankment on Soft Clay, 45

Seismic Site Response for Near-Fault Forward Directivity Ground Motions, 928

### Softening

Lime-Soda Softening Process Modifications for Enhanced NOM Removal, 600

Precipitative Removal of As, Ba, B, Cr, Sr, and V using Sodium Carbonate, 653

### Soil analysis

In Field Soil Characterization: Approach Based on Texture Image Analysis, 787

Screening Level Risk Assessment of Heavy Metal Contamination in Cleveland Area Commons, 627

### Soil cement

Strength and Elastic Properties of Stabilized Mud Block Masonry using Cement-Soil Mortars, 1313

Tensile Bond Strength of Soil-Cement Block Masonry Couplets using Cement-Soil Mortars, 1265

Using UCS as a Surrogate Performance Standard at the NCSU NPL Site, 738

### Soil classification

Determination of Atterberg Limits: Uncertainty and Implications, 816

Prediction of Soil Composition from CPT Data using General Regression Neural Network, 272

### Soil compaction

BCD: A Soil Modulus Device for Compaction Control, 788

Compaction Delay Effects on Properties of Lime-Treated Soil, 1287

Factors Affecting Portable Falling Weight Deflectometer Measurements, 853

Performance of a Cantilever Retaining Wall, 875

Prediction of Soil Composition from CPT Data using General Regression Neural Network, 272

Stress Zones Near Displacement Piers: I. Plastic and Liquefied Behavior, 782

### Soil compression

Comparison in Undrained Shear Strength between Undisturbed and Remolded Ariake Clays, 806

Deformation of Pores in Viscoplastic Soil Material, 22

### Soil conditions

Degree of Saturation and Liquefaction Resistances of Sand Improved with Sand Compaction Pile, 803

### Soil consolidation

Finite-Element Parametric Study of the Consolidation Behavior of a Trial Embankment on Soft Clay, 45

Membrane Behavior of Two Backfills from Field-Constructed Soil-Bentonite Cutoff Walls, 892

Plane Strain and Axially Symmetric Consolidation in Unsaturated Soils, 24

### Soil pollution

Single Hardening Elasto-Plastic Model for Kaolin Clay with Loading-History-Dependent Plastic Potential Function, 17

### Soil deformation

Deformation of Pores in Viscoplastic Soil Material, 22

Large-Scale Experiments on Pore Pressure Generation underneath a Caisson Breakwater, 1884

Pile Behavior due to Excavation-Induced Soil Movement in Clay. I: Stable Wall, 780

Pile Behavior Due to Excavation-Induced Soil Movement in Clay. II: Collapsed Wall, 781

### Soil dynamics

Hydraulic Damping of Saturated Poroelastic Soils During Steady-State Vibration, 523

ONDA: Computer Code for Nonlinear Seismic Response Analyses of Soil Deposits, 800

Seismic Site Response for Near-Fault Forward Directivity Ground Motions, 928

Three-Dimensional Linear and Simplified Nonlinear Soil Response Methods Based on an Input Wave Field, 46

### Soil gas

Centrifuge Testing of LNAPL Migration and Soil Vapor Extraction for Soil Remediation, 1943

Characterization of Methane Flux and Oxidation at a Solid Waste Landfill, 607

Method for Measuring Air-Immiscible Liquid Partition Coefficients, 599

### Soil mechanics

Unsaturated Soil Mechanics in Engineering Practice, 807

### Soil mixing

Development and Production of Ready-Mixed Soil Material, 1354

Experimental Data and Theoretical Analysis of Particle Removal Efficiency in a Novel Hydraulic Separation Unit, 733

Field Evaluation of Crushed Glass - Dredged Material Blends, 831

Laboratory Evaluation of Crushed Glass-Dredged Material Blends, 830

Using UCS as a Surrogate Performance Standard at the NCSU NPL Site, 738

### Soil modulus

BCD: A Soil Modulus Device for Compaction Control, 788

ONDA: Computer Code for Nonlinear Seismic Response Analyses of Soil Deposits, 800

### Soil nailing

Soil — Nail Pullout Interaction in Loose Fill Materials, 36

### Soil permeability

Hydraulic Conductivity of Soil Sorptive Zones Created by In Situ Injection of a Cationic Surfactant, 773

Relating Damping to Soil Permeability, 28

Soil Hydraulic Properties Affecting Discharge Uniformity of Gravity-Fed Subsurface Drip Irrigation Systems, 1225

### Soil pollution

Advanced Oxidation for Treatment of Aqueous Extracts from EDTA Extraction of Pb and Zn Contaminated Soil, 740

## **Soil pollution**

- Application of Fenton's Reagent to Remediate Diesel Contaminated Soils, 1941  
Bioremediation of Petroleum-Contaminated Soil using Composting, 1951  
Citric Acid Enhanced Remediation of Soils Contaminated with Uranium by Soil Flushing and Soil Washing, 609  
Cyclodextrin-Enhanced Electrokinetic Remediation of Soils Contaminated with 2,4-Dinitrotoluene, 718  
Diagnostic Curve for Estimating Soil Dispersion and Instantaneously Injected Mass, 1194  
EDTA-Enhanced Washing for Remediation of Pb- and/or Zn-Contaminated Soils, 730  
Evaluating an Electrokinetically Driven Extraction Method for Measuring Heavy Metal Soil Contamination, 641  
Evaluation of Contaminant Resuspension Potential during Cap Placement at Two Dissimilar Sites, 639  
Hydrocarbon Residuals and Containment in Microfine Cement Grouted Sand, 1284  
Laboratory-Scale Evaluation of Cr(VI) Removal from Clay by Electrokinetics Incorporated with Fe(O) Barrier, 1959  
Low-Temperature Soil Heating using Renewable Energy, 659  
Modeling Substrate Interactions during Aerobic Biodegradation of Mixtures of Vinyl Chloride and Ethene, 705  
PCB Volatilization from Sediments, 594  
Removal of Lead from Contaminated Water and Clay Soil using a Biosurfactant, 687  
Screening Level Risk Assessment of Heavy Metal Contamination in Cleveland Area Commons, 627  
Treating Soil PCP at Optimal Conditions using Heme and Peroxide, 678  
Treatment of Contaminated Soils and Groundwater using ISCO, 1939
- Soil pressure**  
Full-Scale Field Tests on Flexible Pipes under Live Load Application, 1366  
Pipe Behavior due to Excavation-Induced Soil Movement in Clay. I: Stable Wall, 780  
Pipe Behavior Due to Excavation-Induced Soil Movement in Clay. II: Collapsed Wall, 781
- Soil properties**  
Effect of Structure on the Geotechnical Properties of Bauxite Residue, 792  
Estimating Evaporation from Bare Soil using Soil Moisture Data, 1181  
In Field Soil Characterization: Approach Based on Texture Image Analysis, 787  
Lessons Learned for Ground Movements and Soil Stabilization from the Boston Central Artery, 868  
Mars Soil Mechanical Properties and Suitability of Mars Soil Simulants, 73  
Sensitivity Analysis of Soil Hydraulic Properties on Subsurface Water Flow in Furrows, 1211  
Unsaturated Soils 2006, 2096
- Soil resistance**  
Soil Restraint to Oblique Movement of Buried Pipes in Dense Sand, 1681
- Soil sampling**  
Design of Compacted Lateritic Soil Liners and Covers, 798

## **2006 ASCE TRANSACTIONS**

- Liquefaction Resistance of Undisturbed and Reconstructed Samples of a Natural Coarse Sand from Undrained Cyclic Triaxial Tests, 797
- Soil stabilization**  
Case History of Geosynthetic Reinforced Segmental Retaining Wall Failure, 921  
Centrifuge Model Studies of the Seismic Response of Reinforced Soil Slopes, 813  
Confirmation of Aqueous Polymer Sorption on Contaminant Barrier Clay using TGA, 1293  
Enhanced Criterion for Base Soil Retention in Embankment Dam Filters, 929  
General Analytical Framework for Design of Flexible Reinforced Earth Structures, 909  
Lessons Learned for Ground Movements and Soil Stabilization from the Boston Central Artery, 868  
Numerical Model for Reinforced Soil Segmental Walls under Surcharge Loading, 841  
Porosity Fluctuations in Desiccating Samples of Grout-Stabilized Soil, 1289  
Reclaimed Hydrated Fly Ash as a Geomaterial, 1283  
Soil Stabilization in Semiarid and Arid Land Agriculture, 1282  
Soil Stabilization using Basic Oxygen Steel Slag Fines, 1285  
Stabilizing Soft Fine-Grained Soils with Fly Ash, 1291  
Stress Path Testing of Realistically Cured Lime and Lime/Cement Stabilized Clay, 1288
- Soil strength**  
Liquefaction Susceptibility Criteria for Silts and Clays, 908
- Soil structure**  
Advances in Earth Structures — Research to Practice, 2045  
Deformation of Pores in Viscoplastic Soil Material, 22  
Evaluation of the Parameters Influencing Self-Healing in Earth Dams, 860  
General Analytical Framework for Design of Flexible Reinforced Earth Structures, 909  
Heat Flow through Soils and Effects on Thermal Storage Cycle in High-Mass Structures, 64  
Thermoelastic Enhancement of Damping of Sand using Synthetic Ground Rubber, 824
- Soil suction**  
Prediction of Soil-Water Characteristic Curve using Genetic Programming, 840
- Shear strength and pore-water pressure characteristics during constant water content triaxial tests**, 815
- Unsaturated Soils 2006, 2096
- Soil tests**  
Monotonic and Cyclic Behavior of Two Calcareous Soils of Different Origins, 925  
Standard Penetration Test-Based Probabilistic and Deterministic Assessment of Seismic Soil Liquefaction Potential, 10
- Soil treatment**  
Application of Fenton's Reagent to Remediate Diesel Contaminated Soils, 1941  
Bioremediation of Petroleum-Contaminated Soil using Composting, 1951  
Biotreatment of Surfactant Flush Wastewater from Wood Treatment Soil, 595

## SUBJECT INDEX

## Solitary waves

- Centrifuge Testing of LNAPL Migration and Soil Vapor Extraction for Soil Remediation, 1943  
Character of Organic Matter in Soil-Aquifer Treatment Systems, 748  
Cyclodextrin-Enhanced Electrokinetic Remediation of Soils Contaminated with 2,4-Dinitrotoluene, 718  
Fuzzy Geographic Information Systems for Phytoremediation Plant Selection, 596  
Heavy Metals Removal from Acidic and Saline Soil Leachate using Either Electrochemical Coagulation or Chemical Precipitation, 660  
Laboratory-Scale Evaluation of Cr(VI) Removal from Clay by Electrokinetics Incorporated with Fe(O) Barrier, 1959  
Method for Measuring Air-Immiscible Liquid Partition Coefficients, 599  
Modeling Substrate Interactions during Aerobic Biodegradation of Mixtures of Vinyl Chloride and Ethene, 705  
Treating Soil PCP at Optimal Conditions using Heme and Peroxide, 678  
Using UCS as a Surrogate Performance Standard at the NCSU NPL Site, 738
- Soil water**  
Analysis of Deep Moisture Barriers in Expansive Soils.  
I: Constitutive Model Formulation, 43  
Analysis of Deep Moisture Barriers in Expansive Soils.  
II: Water Flow Formulation and Implementation, 44  
Assessment of Soil Moisture Dynamics of the Nebraska Sandhills using Long-Term Measurements and a Hydrology Model, 1216  
BCD: A Soil Modulus Device for Compaction Control, 788  
Considerations from the Design of Intercepting Drainage for Collecting Water from Steep Areas, 1231  
Estimating Evaporation from Bare Soil using Soil Moisture Data, 1181  
Prediction of Soil-Water Characteristic Curve using Genetic Programming, 840  
Soil-Water Characteristic Curves of Stabilized Expansive Soils, 846
- Soil-pile interaction**  
Soil-Pile Response to Blast-Induced Lateral Spreading.  
I: Field Test, 793  
Soil-Pile Response to Blast-Induced Lateral Spreading.  
II: Analysis and Assessment of the  $p-y$  Method, 794
- Soils**  
Accounting for Soil Aging When Assessing Liquefaction Potential, 811  
Calibration of Electromagnetic Induction for Regional Assessment of Soil Water Salinity in an Irrigated Valley, 1213  
Freezing - Thawing Model for Soils and Rocks, 1286  
Hydraulic Conductivity of Soil Sorptive Zones Created by In Situ Injection of a Cationic Surfactant, 773  
Limitations in the Back-Analysis of Strength from Failures, 828  
Mitigation of Soil Movements from Pile Driving, 1977  
Nonlinear Stress-Strain Relationship of Soil Reinforced with Flexible Geofibers, 851  
Soil and Rock Behavior and Modeling, 2088  
Thermal Transfer Analysis of a Freezing Soil Medium with an Embedded Pipeline, 181
- Soil-structure interaction**  
Combined Finite- and Boundary-Element Analysis of the Effects of Tunneling on Single Piles, 49  
Cyclic Lateral Load Response of Bridge Column-Foundation-Soil Systems in Freezing Conditions, 1611  
Effects of Soil-Structure Interaction on the Analysis of Cylindrical Tanks, 1975  
Full-Scale Field Tests on Flexible Pipes under Live Load Application, 1366  
Granular Material Silos under Dynamic Excitation: Numerical Simulation and Experimental Validation, 1594  
Performance Assessment of a Precast-Concrete, Buried, Small Arch Bridge, 1390  
A Robust Macroelement Model for Soil — Pile Interaction under Cyclic Loads, 898  
Simplified Model for Vertical Vibrations of Surface Foundations, 838  
Stiffness of a Flexible Circular Footing Embedded in an Elastic Half-Space, 16
- Solar energy**  
Educational Architecture-Oriented Software Linking Conceptual Design and Solar Intensity, 93  
Hydrogen Production by Plasma Electrolysis, 431
- Solid waste management**  
Estimating the Hydraulic Conductivity of Landfilled Municipal Solid Waste using the Borehole Permeameter Test, 671
- Solid wastes**  
Characterization of Methane Flux and Oxidation at a Solid Waste Landfill, 607  
Estimate of Landfill Settlements due to Mechanical and Decompositional Processes, 837  
Metals Removal from Municipal Waste Incinerator Fly Ashes and Reuse of Treated Leachates, 654  
Seismic Response of a Composite Landfill Cover, 819  
TCLP Heavy Metal Leaching of Personal Computer Components, 638
- Solidification**  
Solidification of New Zealand Harbor Sediments using Cementitious Materials, 1294
- Solids**  
Enhancement of Anaerobic Digestion of Excess Municipal Sludge with Thermal and/or Oxidative Treatment, 670  
The Role of Biofoullation on Suspended Solids and Particulate COD Removal in the Trickling Filter Process, 655  
Uncertainty Analysis of Conventional Water Treatment Plant Design for Suspended Solids Removal, 744
- Solids flow**  
Case Study: Mapping Tsunami Hazards Associated with Debris Flow into a Reservoir, 931  
Case Study: Numerical Simulations of Debris Flow below Stožec, Slovenia, 943  
Effect of Contact Force Models on Granular Flow Dynamics, 566  
Three-Dimensional Topography of Debris-Flow Fan, 962
- Solitary waves**  
Laboratory Observation of Solitary Wave Propagating over a Submerged Rectangular Dike, 488

## Solitary waves

Numerical Simulation of Solitary Waves using Velocity-Vorticity Formulation of Navier-Stokes Equations, 456

Well-Balanced Finite-Volume Model for Long-Wave Runup, 1866

### Solutes

Effects of Velocity Gradients and Secondary Flow on the Dispersion of Solutes in a Meandering Channel, 1061

Numerical Modeling and Analysis of Solute Velocity and Macropdispersion for Linearly and Nonlinearly Sorbing Solutes in a Single Fracture with Matrix Diffusion, 1104

Parametric Study of One-Dimensional Solute Transport in Deformable Porous Media, 870

Regional Salinity Modeling for Conjunctive Water Use Planning in Kheri Command, 1207

Spatial Moment Analysis for One-Dimensional Non-isothermal Quartz Transport and Dissolution/Precipitation in Fracture-Matrix System, 1106

### Solutions

Accurate Representation of External Force in Time History Analysis, 438

### Solvents

Estimation of Diffusion Coefficients and Solubilities for Organic Solvents Permeation through High-Density Polyethylene Geomembrane, 657

### Sorption

Confirmation of Aqueous Polymer Sorption on Contaminant Barrier Clay using TGA, 1293

Coupled Mechanical and Chemical Behavior of Bentonite Engineered with a Controlled Organic Phase, 907

Effect of Test Piece Size on Rheological Behavior of Wood Composites, 518

Estimation of Diffusion Coefficients and Solubilities for Organic Solvents Permeation through High-Density Polyethylene Geomembrane, 657

Evaluation of Pavement Curing Effectiveness and Curing Effects on Concrete Properties, 1302

Factors Influencing Arsenite Removal by Zero-Valent Iron, 749

Hydraulic Conductivity of Soil Sorptive Zones Created by In Situ Injection of a Cationic Surfactant, 773

Influence of Pore-Water Velocity on Transport Behavior of Cadmium: Equilibrium versus Nonequilibrium, 1958

Methodological Aspects of using Blast Furnace Slag for Wastewater Phosphorus Removal, 746

Modeling the Sorption of Fluoride onto Alumina, 608

Moisture Effects on Elastic and Viscoelastic Properties of CFRP Rebars and Vinyl Ester Binder, 1340

Numerical Modeling and Analysis of Solute Velocity and Macropdispersion for Linearly and Nonlinearly Sorbing Solutes in a Single Fracture with Matrix Diffusion, 1104

Optimal Design of a Compacted Soil Liner Containing Sorptive Amendments, 686

Removal of Toluene Vapor with Dispersed Activated Carbon, 622

Role of Particle Size and Ammonium Oxidation in Removal of 17 $\alpha$ -Ethinodiol in Bioreactors, 757

Simultaneous Removal of Cd and Cr(VI) using Fe-Loaded Zeolite, 632

## 2006 ASCE TRANSACTIONS

Vermiculite Filtration for Removal of Oil from Water, 1957

### South Africa

Metakaolin as an Extender in South African Cement, 1332

### South Carolina

Adoption of the International Residential Code in a High Natural Hazards Region — An Overview, 85

### South Dakota

Combination Subsurface Irrigation and Drainage Systems in North-Central South Dakota, 1169

### Space construction

Earth & Space 2006: Engineering, Construction, and Operations in Challenging Environment, 2061

Moondust and More, 2010

Moondust and More, 2011

Structural Design of a Lunar Habitat, 71

### Space exploration

Earth & Space 2006: Engineering, Construction, and Operations in Challenging Environment, 2061

Mars Soil Mechanical Properties and Suitability of Mars Soil Simulants, 73

New Approach to Mission Design Based on the Fundamental Equations of Motion, 65

### Spacing

Pile Spacing Effects on Lateral Pile Group Behavior: Load Tests, 894

Pile Spacing Effects on Lateral Pile Group Behavior: Analysis, 895

### Spain

Downside Risks in Construction Projects Developed by the Civil Service: The Case of Spain, 372

### Spalling

Analyses of Heated Concrete Spalling due to Restrained Thermal Dilation: Application to the "Chunnel" Fire, 552

### Spatial analysis

Computer-Aided Site Layout Planning, 302

Mapping Liquefaction Potential Considering Spatial Correlations of CPT Measurements, 886

Spatial Stability of Shear Deformable Nonsymmetric Thin-Walled Curved Beams: A Centroid-Shear Center Formulation, 573

### Spatial data

Mapping Liquefaction Potential Considering Spatial Correlations of CPT Measurements, 886

### Spatial distribution

CBD Oriented Commuters' Mode and Residential Location Choices in an Urban Area with Surface Streets and Rail Transit Lines, 1799

Hydrologic Modeling of an Eastern Pennsylvania Watershed with NEXRAD and Rain Gauge Data, 1128

Soil Hydraulic Properties Affecting Discharge Uniformity of Gravity-Fed Subsurface Drip Irrigation Systems, 1225

### Spectra

Classifying River Waves by the Saint Venant Equations Decoupled in the Laplacian Frequency Domain, 998

## SUBJECT INDEX

### Spectral analysis

Efficacy of Hilbert and Wavelet Transforms for Time-Frequency Analysis, 543  
Seismic Response and Damage Detection Analyses of an Instrumented Steel Moment-Framed Building, 1591

### Spherical shells

Identification and Modeling of Permanent Deformations of Asphalt Concrete, 458

### Spills

Countermeasure Toe Protection at Spill-Through Abutments, 956

*RiverSpill:* A National Application for Drinking Water Protection, 970

### Spillways

Bottom Aeration of Stepped Spillways, 1014  
Case Study of an S-Shaped Spillway using Physical and Numerical Models, 1021

Development of Air Concentration on Chute Spillways, 1023

Experimental Study and 3D Numerical Simulations for a Free-Overflow Spillway, 1022

Forces on Plunge Pool Slabs: Influence of Joints Location and Width, 936

Hydraulics of Plane Plunge Pool Scour, 976

Minimum Specific Energy and Critical Flow Conditions in Open Channels, 1221

Physical and Numerical Comparison of Flow over Ogee Spillway in the Presence of Tailwater, 1068

### Splicing

Tensile Lap Splicing of Bundled CFRP Reinforcing Bars in Concrete, 217

### Spread foundations

Bearing Capacity of Square and Circular Footings on a Finite Layer of Granular Soil Underlain by a Rigid Base, 916

Liquefaction-Induced Lateral Spreading in Near-Fault Regions during the 1999 Chi-Chi, Taiwan Earthquake, 922

### Spreadsheets

Determining Attribute Weights in a CBR Model for Early Cost Prediction of Structural Systems, 396

Parameter Estimation for the Nonlinear Muskingum Model using the BFGS Technique, 1217

Real Options by Spreadsheet: Parking Garage Case Example, 1147

### Sprinkler irrigation

Method for Measurement of Canopy Interception under Sprinkler Irrigation, 1185

Set Sprinkler Irrigation and Its Cost, 1214

### St. Lawrence River

Collapse of the Quebec Bridge, 1907, 1373

### Stability

Charge Reversal Effect on Blanket in Full-Scale Floc Blanket Clarifier, 756

Collapse during Construction of a Precast Girder Bridge, 1375

Green's Function of the Linearized de Saint-Venant Equations, 447

Limitations in the Back-Analysis of Strength from Failures, 828

### Static loads

Postbuckling Analysis of Geometrically Imperfect Conical Shells, 574

Shear-Flexural Buckling of Cantilever Columns under Uniformly Distributed Load, 557

Time-Delayed Positive Velocity Feedback Control Design for Active Control of Structures, 503

### Stabilization

Leaching of Lime from Fly Ash Stabilized with Lime and Gypsum, 1273

Microstructure and Compactive Instabilities of a Stabilized Residue, 1290

Site-Specific Study on Stabilization of Acid-Generating Mine Tailings using Coal Fly Ash, 1277

Small-Strain Shear Moduli of Chemically Stabilized Sulfate-Bearing Cohesive Soils, 808

Stabilization of Arsenic-Bearing Sludges using Lime, 1276

Tensile Strength Bearing Ratio and Slake Durability of Class F Fly Ash Stabilized with Lime and Gypsum, 1263

### Stadiums

Vibration Performance of a Large Cantilever Grandstand during an International Football Match, 1385

### Stainless steel

Cold-Formed Stainless Steel Sections Subjected to Web Crippling, 1451

Distortional Buckling of Cold-Formed Stainless Steel Sections: Experimental Investigation, 1488

Distortional Buckling of Cold-Formed Stainless Steel Sections: Finite-Element Modeling and Design, 1489

### Stairs

Design Charts for Helicoidal Stair Slabs with Landing at Midspan, 1470

### Standards

Comparative Study of University Courses on Critical-Path Method Scheduling, 358

Determination of Atterberg Limits: Uncertainty and Implications, 816

Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-05 (CD-ROM), 2076

Progressive Collapse of Structures: Annotated Bibliography and Comparison of Codes and Standards, 1407

Screening Level Risk Assessment of Heavy Metal Contamination in Cleveland Area Commons, 627

Standards Governing Glazing Design in Hurricane Regions, 94

Survey of the Construction Industry Relative to the use of CPM Scheduling for Construction Projects, 357

### State government

CommunityViz-Based Prototype Model for Assessing Development Impacts in a Naturalized Floodplain — EmiquonViz, 1795

Considering the Environment in Transportation Planning: Review of Emerging Paradigms and Practice in the United States, 1776

Considering the Environment in Transportation Planning: Review of Emerging Paradigms and Practice in the United States., 1777

State Water Resources Planning in the United States, 2091

### Static loads

Behavior of Axially Loaded Pile Groups Driven in Clayey Silt, 814

## Static loads

- Energy Evaluation for Ramberg — Osgood Hysteretic Model, 529  
Visualization of Crushing Evolution in Granular Materials under Compression using DEM, 32
- Static tests**
- Investigations on the Static Behavior of Self-Compacting Concrete Under-Reamed Piles, 1305  
Midply Wood Shear Wall System: Concept and Performance in Static and Cyclic Testing, 1578  
Structural Behavior of FRP Composite Bridge Deck Panels, 141
- Stationary processes**
- Efficacy of Hilbert and Wavelet Transforms for Time-Frequency Analysis, 543
- Statistical models**
- Distributions of Wave Steepness and Surf Parameter, 1855  
Statistical Modeling to Forecast Odor Levels of Biosolids Applied to Reuse Sites, 652
- Statistics**
- Application of Weibull Statistics to the Tensile Strength of Rock Aggregates, 850  
Assessing the Hydrologic Performance of Best Management Practices, 1101  
Automated Statistical Analysis in Stochastic Project Scheduling Simulation, 315  
Collecting Driving Data to Support Mobile Source Emissions Estimation, 1756  
Construction Delivery Systems: A Comparative Analysis of Their Performance within School Districts, 399  
Critical Review of Deflection Formulas for FRP-RC Members, 206  
Determination of Atterberg Limits: Uncertainty and Implications, 816  
Distributions of Wave Steepness and Surf Parameter, 1855  
Evaluating the Effectiveness of State Department of Transportation Investment Decisions: Linking Performance Measures to Resource Allocation, 1159  
Evaluating the Long-Term Performance of Geosynthetic Clay Liners Exposed to Freeze-Thaw, 804  
Evaluation of the Nash—Sutcliffe Efficiency Index, 1132  
First-Order Reliability Method for Probabilistic Liquefaction Triggering Analysis using CPT, 809  
Frequency Analysis of Ground Snow Data and Production of the Snow Load Map using Geographic Information System for the Eastern Black Sea Region of Turkey, 1553  
Hybrid Course Linking Natural Hazards with Probability and Statistics, 1425  
Impact of Tunnel Reconstruction on Stream Water Quality in Great Smoky Mountains Natl. Park, 1129  
Improved Image Analysis for Evaluating Concrete Damage, 265  
Liquefaction Hazard Mapping—Statistical and Spatial Characterization of Susceptible Units, 844  
Logistic Regression Model for Evaluating Soil Liquefaction Probability using CPT Data, 843  
Performance Evaluation of Reference Evapotranspiration Equations across a Range of Indian Climates, 1190  
Predicting Speeds in an Urban Right-Turn Lane, 1684

## 2006 ASCE TRANSACTIONS

- Pressure Drop as a Criterion of a Steam-Turbine Plant's Efficiency, 423  
Probabilistic Behavior of Floods of Record in the United States, 1120  
Repeated Measurement Data Analysis in Pavement Deterioration Modeling, 1153  
Safety Analysis of Florida Rural Interstate Freeway Travel in Relation to the 65 km/h (40 mi/hr) Minimum Speed Regulation, 1740  
Site-Specific Validation of Random Vibration Theory-Based Seismic Site Response Analysis, 863  
Statistical Characterization of Fiber-Reinforced Polymer Composite Material Properties for Structural Design, 1569  
Statistical Mixed Effects Models for Evaluation and Prediction of Accelerated Pavement Testing Results, 1748  
Statistical Modeling of the Serviceability of Sewage Pumps, 1039  
Statistics of Range of a Set of Normally Distributed Numbers, 1662  
Undrained Bearing Capacity of Two-Strip Footings on Spatially Random Soil, 54  
Updated Precipitation Frequency Estimates for Kansas City: Comparison with TP-40 and HYDRO-35, 1092  
Use of Superpave Gyratory Compaction Data for Rutting Prediction, 1744  
Using Disturbance Data to Assess Vulnerability of Electric Power Delivery Systems, 1161
- Steady flow**
- Equivalent Roughness Height for Plane Bed under Steady Flow, 1048  
General Validity of Conductivity Means in Unsaturated Flow Models, 1125
- Steam electric power generation**
- Pressure Drop as a Criterion of a Steam-Turbine Plant's Efficiency, 423
- Steel**
- Acoustic Emission Damage Assessment of Steel/CFRP Bonds for Rehabilitation, 214  
Behavior of Corrugated Web I-Girders under In-Plane Loads, 517  
Brace Forces in Steel Box Girders with Single Diagonal Lateral Bracing Systems, 1558  
Change of Weld Residual Stresses due to Loss of Material, 1630  
Comparative Study of Fatigue Provisions for the AASHTO Fatigue Guide Specifications and LRFR Manual for Evaluation, 169  
Comparison of Roles of FRP Sheets, Stirrups, and Steel Fibers in Confining Bond Critical Regions, 222  
Composite Construction in Steel and Concrete V, 2057  
Design of Slender Angle Section Beam-Columns by the Direct Strength Method, 1458  
Ductile Web Fracture Initiation in Steel Shear Links, 1556  
Effect of Fiber-Reinforced Polymer Wraps on Corrosion Activity and Concrete Cracking in Chloride-Contaminated Concrete Cylinders, 202  
Erosive Wear of Hydraulic Concrete with Low Steel Fiber Content, 1065  
Finite-Element Analysis of Tapered Steel and Fiber-Reinforced Plastic Bridge Camera Poles, 164

## SUBJECT INDEX

- Flexural Behavior of Hybrid FRP-Concrete-Steel Double-Skin Tubular Members, 233  
Interaction of Top Lateral and Internal Bracing Systems in Tub Girders, 1598  
Microvoid Damage Model with Material Dilatation for Ductile Fracture, 546  
Minor Axis Moment-Thrust Response Behavior in Steel I-Shaped Members, 1544  
Overture to Omaha, 2024  
Partial Interaction Shear Flow Forces in Continuous Composite Steel-Concrete Beams, 1460  
Pendulum Tuned Mass Dampers for Floor Vibration Control, 1371  
Performance Implications of Imperfectly Plastic Material in Metallic Structures with Nonmetallic Reinforcement, 1461  
Postpeak Strength of Interfaces in a Stress-Dilatancy Framework, 914  
Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. I: Theory, 1515  
Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. II: Applications, 1516  
Simple Phenomenological Model for Reinforcing Steel under Arbitrary Load, 1542  
Soil Stabilization using Basic Oxygen Steel Slag Fines, 1285  
Tension Stiffening Model for Concrete Beams Reinforced with Steel and FRP Bars, 1363  
Tests on the Ductility of Reinforced Concrete Beams Retrofitted with FRP and Steel Near-Surface Mounted Plates, 199  
Virtual Shop Model for Experimental Planning of Steel Fabrication Projects, 281
- Steel beams**  
Debonding Strength of Steel Beams Strengthened with CFRP Plates, 195  
Distortion Buckling Tests on Cold-Formed Steel Beams, 1490  
Monitoring of Steel Railway Floor Beams Prestressed by Steel Plates, 171  
Selection of Carbon-Fiber-Reinforced Polymer Systems for Steelwork Upgrading, 1335  
Service-Stage Analysis of Curved Composite Steel-Concrete Bridge Beams, 1629  
Stability Requirements for Beams in Seismic Steel Moment Frames, 1570  
Testing, Analysis, and Evaluation of a GFRP Deck on Steel Girders, 142
- Steel columns**  
Compression Behavior of Nonslender Cylindrical Steel Members with Small and Large-Scale Geometric Imperfections, 1560  
Local-Plate and Distortion Postbuckling Behavior of Cold-Formed Steel Lipped Channel Columns with Intermediated Stiffeners, 1491  
Nonlinear Equation for Flexural Stiffness of Slender Composite Columns in Major Axis Bending, 1477  
Stability and Ductility of Thin-Walled Circular Steel Columns under Cyclic Bidirectional Loading, 1599
- Steel construction**  
Distortion Buckling of Cold-Formed Steel Members, 1503

## Steel plates

- Steel decks**  
Consistent Approach to Calculating Stresses for Fatigue Design of Welded Rib-to-Web Connections in Steel Orthotropic Bridge Decks, 154
- Steel fibers**  
High-Carbon Fly Ash in Manufacturing Conductive CLSM and Concrete, 1347
- Steel frames**  
Blind Test Results for Nondestructive Damage Detection in a Steel Frame, 1520  
Effects of Connection Fractures on Global Behavior of Steel Moment Frames Subjected to Earthquakes, 1447  
Effects of Ground Motion Parameters and Cyclic Degradation Behavior on Collapse Response of Steel Moment-Resisting Frames, 1592  
Genetic Algorithm Based Construction-Conscious Minimum Weight Design of Seismic Steel Moment-Resisting Frames, 1444  
Modeling Steel Frame Buildings in Three Dimensions. I: Panel Zone and Plastic Hinge Beam Elements, 470  
Modeling Steel Frame Buildings in Three Dimensions. II: Elastofiber Beam Element and Examples, 471  
Optimum Arm Geometry for Ductile Modular Connectors, 1510  
Reliability of Steel Frames Designed with Advanced Analysis, 1465  
Seismic Design Optimization of Steel Building Frameworks, 1466  
Seismic Evaluation of Steel Moment Frame Buildings Designed using Different R-Values, 1583  
Seismic Response and Damage Detection Analyses of an Instrumented Steel Moment-Framed Building, 1591  
Seismic-Resistant Weld-Free Steel Frame Buildings with Mechanical Joints and Hysteretic Dampers, 1525  
Testing Protocol for Short Links in Eccentrically Braced Frames, 1554  
Testing Protocol for Short Links in Eccentrically Braced Frames, 1555
- Steel piles**  
Experimental Studies on Seismic Behavior of Steel Pile-to-Pile-Cap Connections, 119  
Investigation of Longitudinal Forces in a Concrete Railroad Trestle, 165
- Steel pipes**  
Loading of a Gavel-Buried Steel Pipe Subjected to Rockfall, 913  
Probability of Fatigue Failure in Steel Catenary Risers in Deep Water, 539  
Validation of Shoring Made of HDPE Pipe or CGS Pipe Normally Used for Culverts and Sewers, 1974
- Steel plates**  
Concentrically Loaded Circular Steel Plates Bearing on Plain Concrete, 1614  
Experimental Evaluation of Compressive Behavior of Orthotropic Steel Plates for the New San Francisco—Oakland Bay Bridge, 118  
Monitoring of Steel Railway Floor Beams Prestressed by Steel Plates, 171

## Steel structures

### Steel structures

- Behavior and Design of Commercial Multistory Buildings Subjected to Blast, 1398  
Behavior of High Strength Structural Steel at Elevated Temperatures, 1631  
Comparison of Various Procedures for Progressive Collapse Analysis, 1402  
Design of Steel Transmission Pole Structures (ASCE/SEI 48-05), 2058  
Effect of Torsion on Limiting Temperature of Steel Structures in Fire, 1512  
Experimental Performance of Link-to-Column Connections in Eccentrically Braced Frames, 1557  
Experimental Stiffness and Seismic Response of Pallet-Type Steel Storage Rack Connectors, 1987  
Improving Full-Scale Transmission Tower Design through Topology and Shape Optimization, 1518  
Optimal Seismic Design Considering Risk Attitude, Societal Tolerable Risk Level, and Life Quality Criterion, 1639  
Predicting the Shear Strength of Mechanical Clinching in Cold-Formed Steel Structures, 1308  
Seismic Evaluation of Steel Moment Frame Buildings Designed using Different R-Values, 1583  
Use of Fiber-Reinforced Polymer Composite Elements to Enhance Structural Steel Member Ductility, 223  
Void Growth Model and Stress Modified Critical Strain Model to Predict Ductile Fracture in Structural Steels, 1627

### Stiffening

- Design Provisions for Sections Containing Unstiffened Elements with Stress Gradient, 8  
Hysteretic Model of Stiffened Shear Panel Dampers, 1486  
Mechanics of Web Panel Postbuckling Behavior in Shear, 1595  
Response Prediction of RC Beams Externally Bonded with Steel-Reinforced Polymers, 207  
Tension Stiffening Model for Concrete Beams Reinforced with Steel and FRP Bars, 1363

### Stiffness

- Behavior and Design of Commercial Multistory Buildings Subjected to Blast, 1398  
Behavior of Axially Loaded Pile Groups Driven in Clayey Silt, 814  
Brace Forces in Steel Box Girders with Single Diagonal Lateral Bracing Systems, 1558  
Characterization of a Pultruded FRP Sheet Pile for Waterfront Retaining Structures, 1333  
Characterization of Unistrut Connection Method with Pultruded Fiber-Reinforced Polymer Channels, 1342  
Closed-Form Stiffness Matrix for the Four-Node Quadrilateral Element with a Fully Populated Material Stiffness, 581  
Collapse during Construction of a Precast Girder Bridge, 1375  
Complex Edge Stiffeners for Thin-Walled Members, 1459  
Construction of Customized Mass-Stiffness Pairs using Templates, 80  
Dynamic Characteristics and Effective Stiffness Properties of Honeycomb Composite Sandwich Structures for Highway Bridge Applications, 203

## 2006 ASCE TRANSACTIONS

- Effects of Vertical Load and Hold-Down Anchors on the Cyclic Response of Wood Framed Shear Walls, 1579  
Experimental Behavior of Stiffened and Unstiffened End-Plate Connections under Cyclic Loading, 1572  
Experimental Stiffness and Seismic Response of Pallet-Type Steel Storage Rack Connectors, 1987  
Experiments of Cold-Formed Steel Connections and Portal Frames, 1498  
Factors Affecting Portable Falling Weight Deflectometer Measurements, 853  
Finite-Element Modeling of the Nonlinear Behavior of Bolted-T-Stub Connections, 1530  
Form-Finding of Nonregular Tensegrity Systems, 1580  
"Giant Superelasticity Effect" in NiTi Superelastic Materials and Its Applications, 1360  
Grace under Pressure, 2013  
Influence Zone for End Bearing of Piles in Sand, 891  
Investigation of Foundation Vibrations Resting on a Layered Soil System, 789  
Lateral Stiffness of Shear Walls with Openings, 1621  
Long-Term Deflections of Reinforced Concrete Beams Externally Bonded with FRP System, 236  
Monotonic and Cyclic Behavior of Two Calcareous Soils of Different Origins, 925  
Nonlinear EI Equation for Slender Composite Columns Bending about the Minor Axis, 1596  
Nonlinear Equation for Flexural Stiffness of Slender Composite Columns in Major Axis Bending, 1477  
Overview of Vibrational Structural Health Monitoring with Representative Case Studies, 174  
Particle Shape Effects on Packing Density, Stiffness, and Strength: Natural and Crushed Sands, 832  
Sequential Hybrid Inverse Mapping for State-Specified Design of Frames, 1581  
Short-Term Structural Instability under Random Dynamic Loads, 568  
Small-Strain Shear Moduli of Chemically Stabilized Sulfate-Bearing Cohesive Soils, 808  
Stiffness Assessment through Modal Analysis of an RC Slab Bridge before and after Strengthening, 162  
Stiffness of a Flexible Circular Footing Embedded in an Elastic Half-Space, 16  
Strength and Behavior of Cold-Formed Steel Z-Sections Subjected to Major Axis Bending, 1600  
Strength and Stiffness of Conventional Bridging Systems for Cold-Formed Cee Studs, 1493  
Stress Path Testing of Realistically Cured Lime and Lime/Cement Stabilized Clay, 1288  
Sudden Failure of a Heavily Loaded Container Pavement, 912  
Stochastic models  
Coupled Surge-Heave Motions of a Moored System: II: Stochastic Analysis and Simulations, 502  
Decision Tree Modeling Using Integrated Multilevel Stochastic Networks, 412  
Modeling Uncertainty in an Object-Oriented Reservoir Operations Model, 1176  
Optimal Layout of Sewer Systems: A Deterministic versus a Stochastic Model, 1018  
Sensor Placement in Water Networks: A Stochastic Programming Approach, 1820  
Simulated Annealing - Genetic Algorithm for Transit Network Optimization, 251

## SUBJECT INDEX

- Strain**
- Stochastic Dynamic Programming with Risk Consideration for Transbasin Diversion System, 1812  
Stochastic Point Rainfall Modeling for Correlated Rain Cell Intensity and Duration, 1073  
A Stochastic Transformation Field Theory for Heterogeneous Materials, 564
- Stochastic processes**
- Comparison of Two Nonparametric Alternatives for Stochastic Generation of Monthly Rainfall, 1094  
Contingency Planning in Project Selection using Multi-objective Optimization and Chance Constraints, 1148  
Domain Decomposition Method for Calculating the Failure Probability of Linear Dynamic Systems Subjected to Gaussian Stochastic Loads, 482  
Evaluation of Karhunen-Loeve, Spectral, and Sampling Representations for Stochastic Processes, 453  
Flexibility-Based Damage Localization from Stochastic Realization Results, 499  
Galerkin Solution for Linear Stochastic Algebraic Equations, 570  
Generalized Bouc-Wen Model for Highly Asymmetric Hysteresis, 495  
Joint First-Passage Probability and Reliability of Systems under Stochastic Excitation, 441  
Markov-Based Optimization Model for Building Facilities Management, 407  
Optimal Vibration Absorber with Nonlinear Viscous Power Law Damping and White Noise Excitation, 439  
Probabilistic Model for the Assessment of Historic Buildings under Permanent Loading, 1361  
Stochastic Flow Analysis for Predicting River Scour of Cohesive Soils, 980  
Stochastic Streamflow Simulation using SAMS-2003, 1177
- Stones**
- Microanalytical Characterizations of Eroded and Slaked Mudstone Proposed as Landfill Liner Material, 1953  
Particulate Matter from Stone Crushing Industry: Size Distribution and Health Effects, 628
- Storage**
- Experimental Stiffness and Seismic Response of Parallel-Type Steel Storage Rack Connectors, 1987
- Storage tanks**
- Vapor Leak Detection for an Underground Storage Tank System, 703
- Storm sewers**
- Considerations for Storm-Water Outfalls off Exposed Coasts, 1233  
Full-Scale Field Tests on Flexible Pipes under Live Load Application, 1366  
Urban Runoff Quality Characterization and Load Estimation in Saskatoon, Canada, 750
- Storms**
- Enhanced Runoff Curve Number Model Incorporating Storm Duration and a Nonlinear  $I_a$ - $S$  Relation, 1136
- Stormwater management**
- Analytical Urban Storm Water Quality Models Based on Pollutant Buildup and Washoff Processes, 734  
Assessing the Hydrologic Performance of Best Management Practices, 1101
- Attachment of Fecal Indicator Bacteria to Particles in the Neuse River Estuary, N.C., 736  
Calibrated Models of Deicing Agent Solids, Pavement Texture, and Specific Conductivity of Highway Runoff, 761  
Case Study: Design and Operation of Sustainable Urban Infiltration Ponds Treating Storm Runoff, 1775  
Combined Hydraulic and Black-Box Models for Flood Forecasting in Urban Drainage Systems, 1131  
Comparison of Two Model Concepts for Simulation of Nitrogen Removal at a Full-Scale Biological Nutrient Removal Pilot Plant, 636  
Considerations for Storm-Water Outfalls off Exposed Coasts, 1233  
Design of Street Curb Opening Inlets using a Decay-Based Clogging Factor, 1057  
Dioxin in Storm-Water Runoff in Houston, Texas, 770  
Downstream Economic Benefits of Conservation Development, 1804  
Dynamic Characteristics of Particle Size Distribution in Highway Runoff: Implications for Settling Tank Design, 695  
Estimating Pollutant Mass Accumulation on Highways during Dry Periods, 711  
Evaluating Bioretention Hydrology and Nutrient Removal at Three Field Sites in North Carolina, 1232  
Grass Swale-Perforated Pipe Systems for Stormwater Management, 1170  
Great Works on Urban Water Resources (1962-2001), 2071  
Increasing Stormwater Outfall Duration, Magnitude, and Volume through Combined Sewer Separation, 1119  
Integrated Management of Irrigation and Urban Storm-Water Infiltration, 1839  
Investigation of Boundary Shear Stress and Pollutant Detachment from Impervious Surface during Simulated Urban Storm Runoff, 592  
Oil and Grease Measurement in Highway Runoff — Sampling Time and Event Mean Concentrations, 629  
Opportunity Costs of Residential Best Management Practices for Stormwater Runoff Control, 1810  
Optimization of Frequency Distribution of Storm-Water Discharges for Coastal Ecosystem Restoration, 1835  
Peak Discharge Estimation using Analytical Probabilistic and Design Storm Approaches, 1075  
Runoff Quality Analysis of Urban Catchments with Analytical Probabilistic Models, 1801  
Standard Guidelines for the Design of Urban Stormwater Systems ASCE/EWRI 45-05; Standard Guidelines for Installation of Urban Stormwater Systems ASCE/EWRI 46-05; Standard Guidelines for the Operation and Maintenance of Urban Stormwater Systems ASCE/EWRI 47-05, 2089  
Start at the Source, 2001  
Storm Water Detention Ponds: Modeling Heavy Metal Removal by Plant Species and Sediments, 717  
Storm-Water Predictions by Dimensionless Unit Hydrograph, 1210  
Updating Rainfall IDF Relationships to Maintain Urban Drainage Design Standards, 1123
- Strain**
- Damage Identification Based on Dead Load Redistribution: Methodology, 1562

## Strain

- Development and Implementation of a Continuous Strain Monitoring System on a Multi-Girder Composite Steel Bridge, 179  
Effects of Strain and Damage on Strain-Sensing Ability of Carbon Fiber Cement, 1299  
Interpretation of Impact Penetration Measurements in Soft Clays, 848  
Principal Deviatoric Strain Increment Ratios for Sand having Inherent Transverse Isotropy, 47  
Robustness Analysis of Two-Dimensional Networks, 1664  
Strain Localization in Combined Axial-Torsional Testing on Kaolin Clay, 489  
System for In-Service Strain Monitoring of Ordinary Bridges, 170
- Strain distribution**
- Analysis of Factors Affecting Strain Distribution in Geosynthetics, 777
- Microscopic Evaluation of Strain Distribution in Granular Materials during Shear, 785
- Strain energy**
- Cross-Modal STrain Energy Method for Estimating Damage Severity, 477
- Modal Strain Energy Decomposition Method for Damage Localization in 3D Frame Structures, 533
- Strain measurement**
- Assessment of Bridge Remaining Fatigue Life through Field Strain Measurement, 177  
Estimating Fatigue Life of Bridge Components Using Measured Strains, 176
- Strain rate**
- Upsetting Tests of Fresh Cementitious Composites for Extrusion, 450
- Strain softening**
- Critical Inclination of Compression Struts in Concrete Beams, 1508  
Damage Theory Based on Composite Mechanics, 561  
Double Strain Softening and Diagonally Crossing Shear Bands of Sand in Drained Triaxial Tests, 57  
Numerical Analysis of T-Bar Penetration in Soft Clay, 53
- Stratification**
- Response of a Tropical Reservoir to Bubbler Destratification, 682
- Stream channels**
- Scour around Bankline and Setback Abutments in Compound Channels, 933
- Stream gaging**
- Accuracy of Annual Volume from Current-Meter-Based Stage Discharges, 1121  
*RiverSpill*: A National Application for Drinking Water Protection, 970
- Streamflow**
- Combining Rainfall-Runoff Model Outputs for Improving Ensemble Streamflow Prediction, 1130  
Comparison of Three Alternative ANN Designs for Monthly Rainfall-Runoff Simulation, 1122  
Comparison of Two Nonparametric Alternatives for Stochastic Generation of Monthly Rainfall, 1094  
Estimating 70/10 Confidence Limits from Data: A Bootstrap Approach, 1821

## 2006 ASCE TRANSACTIONS

- Evaluation of the National Weather Service Operational Hydrologic Model and Forecasts for the American River Basin, 1111  
Flow Depletion Induced by Pumping Well from Finite Length of Stream, 1222  
Flow Depletion of Semipervious Streams Due to Unsteady Pumping Discharge, 1209  
Hybrid, Markov Chain-Based Model for Daily Streamflow Generation at Multiple Catchment Sites, 1097  
Methods for Developing Naturalized Monthly Flows at Gaged and Ungaged Sites, 1076  
Modified K-NN Model for Stochastic Streamflow Simulation, 1110  
Stochastic Streamflow Simulation using SAMS-2003, 1177  
Use of Satellite Data for Streamflow and Reservoir Storage Forecasts in the Snake River Basin, 1811
- Streams**
- Application of UVP within Porous Beds, 1028  
Approach to Separate Sand from Gravel for Bed-Load Transport Calculations in Streams with Bimodal Sediment, 1051  
Aquifer Diffusivity Estimation from Response to Stream Stage Variation, 1100  
Concentration — Duration — Frequency Curves for pH in a Stream in the Great Smoky Mountains, 765  
Disturbance Caused by Bed Sills on the Slopes of Steep Streams, 1052  
Flow Depletion of Semipervious Streams Due to Unsteady Pumping Discharge, 1209  
Integrated Hydrodynamic and Water Quality Modeling System to Support Nutrient Total Maximum Daily Load Development for Wissahickon Creek, Pennsylvania, 644  
Stage-Discharge Relations for Low-Gradient Tidal Streams using Data-Driven Models, 979
- Streets**
- CBD Oriented Commuters' Mode and Residential Location Choices in an Urban Area with Surface Streets and Rail Transit Lines, 1799  
Computational Fluid Dynamics Simulation of Concentration Distributions from a Point Source in the Urban Street Canyons, 67  
Design of Street Curb Opening Inlets using a Decay-Based Clogging Factor, 1057
- Strength**
- Effect of Test Piece Size on Rheological Behavior of Wood Composites, 518  
Failure Behavior of Spruce Wood under Bending-Shear Combined Stress Field, 1271  
Particle Shape Effects on Packing Density, Stiffness, and Strength: Natural and Crushed Sands, 832  
Quantifying the Effect of Rock Strength Criteria on Minimum Drilling Mud Weight Prediction using Polyaxial Rock Strength Test Data, 38  
Static Strength of Cracked Square Hollow Section T Joins under Axial Loads. I: Experimental, 1475  
Static Strength of Cracked Square Hollow Section T Joins under Axial Loads. II: Numerical, 1476  
Strength of Lightweight Glass Aggregate Concrete, 1343

## SUBJECT INDEX

### Stress

- Automatically Computing the Displacements and Stresses Induced by Three-Dimensional Arbitrarily Shaped Loads in a Transversely Isotropic Medium, 18
- Bimodal Alongwind Fatigue of Structures, 1528
- Design Provisions for Sections Containing Unstiffened Elements with Stress Gradient, 8
- Difference between In Situ Flexible Pavement Measured and Calculated Stresses and Strains, 1725
- Displacements and Stresses Due to a Uniform Vertical Circular Load in an Inhomogeneous Cross-Anisotropic Half-Space, 12
- Effect of Gas on Pore Pressures in Wet Landfills, 829
- Long-Term Behavior of Precast Segmental Cantilever Bridges, 137
- Normalizing the CPT for Overburden Stress, 812
- Strain Localization in Combined Axial-Torsional Testing on Kaolin Clay, 489
- Strengthening of Reinforced Concrete Bridge Columns with FRP Wrap, 1991
- Stress Reduction Coefficient and Amplification Factor for Seismic Response of Ground, 26
- Suction Stress Characteristic Curve for Unsaturated Soil, 791
- Void Growth Model and Stress Modified Critical Strain Model to Predict Ductile Fracture in Structural Steels, 1627

### Stress analysis

- Empirical Punching Shear Failure Theory for Oriented Strand Boards: Preliminary Study, 1487
- Evaluation of Early Strength Requirement of Concrete for Slab Replacement using Accelerated Pavement Testing, 1749

Local Rotations in Borehole Breakouts — Observed and Modeled Stress Field Rotations and Their Implications for the Petroleum Industry, 52

Modeling of Multilayer Composite Fabrics for Gas Turbine Engine Containment Systems, 62

Threshold Shear Strain for Cyclic Pore-Water Pressure in Cohesive Soils, 900

### Stress concentration

- Fatigue of Corrugated-Web Plate Girders: Analytical Study, 1575
- Fatigue of Corrugated-Web Plate Girders: Experimental Study, 1574
- Local Rotations in Borehole Breakouts — Observed and Modeled Stress Field Rotations and Their Implications for the Petroleum Industry, 52
- Simplified Structural Analysis of Retaining Walls on Stepped Footings, 1973
- Size Effect on Strength of Quasi — Brittle Structures with Reentrant Corners Symmetrically Loaded in Tension, 558

### Stress distribution

- Concentrically Loaded Circular Steel Plates Bearing on Plain Concrete, 1614
- Distribution of Compressive Stresses in Transversely Posttensioned Concrete Bridge Decks, 110
- Load Transfer in Rammed Aggregate Piers, 51
- Pinned Connection Strength and Behavior, 1456

### Stress intensity factor

- Computation of Mixed-Mode Stress Intensity Factors for Cracks in Three-Dimensional Functionally Graded Solids, 435

## Structural analysis

Determination of Stress Intensity Factors for a Cracked Shell under Bending with Improved Shell Theories, 60

### Stress measurement

- Measurement of Truck Axle Weights by Instrumenting Longitudinal Ribs of Orthotropic Bridge, 155
- Performance of a Cantilever Retaining Wall, 875

### Stress strain relations

- Analytical Stress — Strain Relationshi for Concrete Confined by Steel Stirrups and/or FRP Jackets, 1577
- Anisotropic Nonlinear Elastic Model for Particulate Materials, 874

Assessment of Localized Damage in Concrete under Compression using Acoustic Emission, 1296

Behavior and Modeling of Fiber Reinforced Polymer-Confining Concrete, 9

Compression Field Modeling of Confined Concrete: Constitutive Models, 1318

Effect of Contact Force Models on Granular Flow Dynamics, 566

Modeling of Multilayer Composite Fabrics for Gas Turbine Engine Containment Systems, 62

Nonlinear Stress-Strain Relationship of Soil Reinforced with Flexible Geofibers, 851

Performance of Structures before and during Failure, 1972

Simple Phenomenological Model for Reinforcing Steel under Arbitrary Load, 1542

Simple Hardening Elasto-Plastic Model for Kaolin Clay with Loading-History-Dependent Plastic Potential Function, 17

Stress — Strain Behavior of Large-Scale Circular Columns Confined with FRP Composites, 1450

Unloading and Reloading Stress — Strain Model for Confined Concrete, 1449

### Stress waves

Measurement of Truck Axle Weights by Instrumenting Longitudinal Ribs of Orthotropic Bridge, 155

Nondestructive and Laboratory Evaluation of Damage Gradients in Concrete Structure Exposed to Cryogenic Temperatures, 1368

### Structural analysis

Analyses of a Two-Story Unreinforced Masonry Building, 1505

Application of Web Services for Structural Engineering Systems, 260

Design Charts for Helicoidal Stair Slabs with Landing at Midspan, 1470

Effects of Environmental Action on Thermal Stress Analysis of Karaj Concrete Arch Dam, 487

Form-Finding of Nonregular Tensegrity Systems, 1580

Homogenization Approach for the Limit Analysis of Out-of-Plane Loaded Masonry Walls, 1602

Long-Term Behavior of Precast Segmental Cantilever Bridges, 137

Natural Frequencies of a Structure with Bounded Uncertainty, 578

Performance Assessment of a Precast-Concrete, Buried, Small Arch Bridge, 1390

Seismic Fragility Analysis of Structural Systems, 473

Simplified Structural Analysis of Retaining Walls on Stepped Footings, 1973

Structural Analysis of the Wooden Structure of the Historical Building of Ali Qapu, 1616

## Structural analysis

- Structural Weight Optimization of Frames Using Tabu Search. I: Optimization Procedure, 1622  
Structural Weight Optimization of Frames Using Tabu Search. II: Evaluation and Seismic Performance, 1623  
Study of Turkish Bridge Standards Involving a Reinforced Concrete Arch Bridge, 1393
- Structural behavior**
- Effects of Connection Fractures on Global Behavior of Steel Moment Frames Subjected to Earthquakes, 1447  
"Giant Superelasticity Effect" in NiTi Superelastic Materials and Its Applications, 1360  
Seismic Response and Damage Detection Analyses of an Instrumented Steel Moment-Framed Building, 1591  
Structural Behavior of FRP Composite Bridge Deck Panels, 141
- Structural control**
- Active Control with Optical Fiber Sensors and Neural Networks. I: Theoretical Analysis, 1566  
Active Control with Optical Fiber Sensors and Neural Networks. II: Experimental Verification, 1567  
Control of Suspension Bridge Nonlinear Vibrations due to Moving Loads, 500  
Coupled Building Control Considering the Effects of Building/Connector Configuration, 1524  
Experimental Verification of Smart Cable Damping, 462  
Optimal Control: Basis for Performance Comparison of Passive and Semicaptive Isolation Systems, 504  
Optimal Nonlocal and Asymmetric Structural Damping using Regenerative Force Actuation Networks, 532  
Sampled Data Feedback-Feedforward Control of Structures with Time Delays, 1549  
Time-Delayed Positive Velocity Feedback Control Design for Active Control of Structures, 503
- Structural design**
- 17th Analysis and Computation Specialty Conference, 2044  
Buckling of GFRP Columns: An Empirical Approach to Design, 242  
Building Integration Solutions, 2053  
Classroom Assessment and Redesign of an Undergraduate Steel Design Course: A Case Study, 1433  
Computer Representation to Support Conceptual Structural Design within a Building Architectural Context, 253  
Design Charts for Helicoidal Stair Slabs with Landing at Midspan, 1470  
Design Issues for Concrete Reinforced with Steel Fibers, Including Fibers Recovered from used Tires, 1339  
Distortion Buckling of Cold-Formed Stainless Steel Sections: Finite-Element Modeling and Design, 1489  
Distributed Hybrid Genetic Algorithms for Structural Optimization on a PC Cluster, 1625  
Dynamic Ratcheting in Elastoplastic Single-Degree-of-Freedom Systems, 475  
Effects of Soil-Structure Interaction on the Analysis of Cylindrical Tanks, 1975  
Experimental Investigation of Aluminum Alloy Thin-Walled Tubular Members in Combined Compression and Bending, 1632

## 2006 ASCE TRANSACTIONS

- Exposure Categories and Transitions for Design Wind Loads, 1612  
Finite-Element Simulation and Design of Cold-Formed Steel Channels Subjected to Web Crippling, 1633  
A Healing Place, 1998  
Improving Full-Scale Transmission Tower Design through Topology and Shape Optimization, 1518  
Increased Snow Loads and Wind Actions on Existing Buildings: Reliability of the Norwegian Building Stock, 1618  
Local-Plate and Distortional Postbuckling Behavior of Cold-Formed Steel Lipped Channel Columns with Intermediated Stiffeners, 1491  
Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-05 (CD-ROM), 2076  
Nonconstrained Flagpole Design Formula, 1454  
Nonlinear EI Equation for Slender Composite Columns Bending about the Minor Axis, 1596  
Nonlinear Equation for Flexural Stiffness of Slender Composite Columns in Major Axis Bending, 1477  
Optimal Design with Probabilistic Objective and Constraints, 445  
Performance-Based Structural Fire Safety, 1369  
Reliability of Steel Frames Designed with Advanced Analysis, 1465  
Seismic Evaluation of Steel Moment Frame Buildings Designed using Different R-Values, 1583  
Sequential Hybrid Inverse Mapping for State-Specified Design of Frames, 1581  
Shape Selection for Lattice Structures, 1608  
Shear Resistance of FRP RC Beams: Experimental Study, 235  
Standard Guidelines for the Design of Urban Stormwater Systems ASCE/EWRI 45-05; Standard Guidelines for Installation of Urban Stormwater Systems ASCE/EWRI 46-05; Standard Guidelines for the Operation and Maintenance of Urban Stormwater Systems ASCE/EWRI 47-05, 2089  
Statistical Characterization of Fiber-Reinforced Polymer Composite Material Properties for Structural Design, 1569  
Structural Design of a Lunar Habitat, 71  
Tests and Design of Aluminum Alloy Compression Members, 1546  
Through it All, 2004  
Virtual Experiments for Welded Structural Steel Connections, 1983
- Structural dynamics**
- Condensed Model Identification and Recovery for Structural Damage Assessment, 1638  
Construction of Customized Mass-Stiffness Pairs using Templates, 80  
Continuum Modeling of an Innovative Space-Based Radar Antenna Truss, 79  
Effects of Connection Fractures on Global Behavior of Steel Moment Frames Subjected to Earthquakes, 1447  
Fatigue Damage of Steel Bridges Due to Dynamic Vehicle Loads, 135  
Modeling the Impact of Failed Members for Progressive Collapse Analysis of Frame Structures, 1403  
On the Comparison of Timoshenko and Shear Models in Beam Dynamics, 554  
Optimal Control: Basis for Performance Comparison of Passive and Semicaptive Isolation Systems, 504

## SUBJECT INDEX

- Overview of Vibrational Structural Health Monitoring with Representative Case Studies, 174  
Vehicle Condition Surveillance on Continuous Bridges Based on Response Sensitivity, 442
- Structural elements**  
Tensile Lap Splicing of Bundled CFRP Reinforcing Bars in Concrete, 217
- Structural engineering**  
Engineering with the Spreadsheet — Structural Engineering Templates Using Excel, 2063  
Mitigating Risk from Abnormal Loads and Progressive Collapse, 1397  
Preventing Disproportionate Collapse, 1396  
Residential Building Loads: Review and Roadmap for the Future, 2083  
Security Barrier Design, 1981  
Seismic Behavior of High-Strength Concrete Columns Confined by Fiber-Reinforced Polymer Tubes, 243  
Structures Congress 2006: Structural Engineering and Public Safety, 2092
- Structural failures**  
Assessing Damage to Airport Pavement Structure due to Complex Gear Loads, 1761  
Global System Considerations for Progressive Collapse with Extensions to Other Natural and Man-Made Hazards, 1406  
Normalized Test for Prediction of Debonding Failure in Concrete Element Strengthened with CFRP, 240  
Performance of Structures before and during Failure, 1972  
Progressive Collapse — An Implosion Contractor's Stock in Trace, 1405
- Structural members**  
Theoretical Analysis of Transfer Lengths in Pretensioned Prestressed Concrete Members, 545
- Structural models**  
Nonlinear Aeroelasticity: Continuum Theory, Flutter/Divergence Speed, and Plate Wing Model, 76  
Structural Response of Elements Combining Ultra-high-Performance Fiber-Reinforced Concretes and Reinforced Concrete, 1615
- Structural reliability**  
Applying Method of Moments to Model Reliability of Pavements Infrastructure, 1706  
Domain Decomposition Method for Calculating the Failure Probability of Linear Dynamic Systems Subjected to Gaussian Stochastic Loads, 482  
Electrical Transmission Line and Substation Structures: Structural Reliability in a Changing World, 2062  
Experimental Verification and Full-Scale Deployment of Global Positioning System to Monitor the Dynamic Response of Tall Buildings, 1561  
Hybrid Data Mining/Genetic Shredding Algorithm for Reliability Assessment of Structural Systems, 1582  
Probabilistic Model for the Assessment of Historic Buildings under Permanent Loading, 1361  
Probability-Based Bridge Network Performance Evaluation, 167  
Reliability of Steel Frames Designed with Advanced Analysis, 1465  
Reliability-Based Optimization of Fiber-Reinforced Polymer Composite Bridge Deck Panels, 1626  
Seismic Reliability of Low-Rise Nonsymmetric Wood-frame Buildings, 1513
- Structural Damage Detection via Modal Data with Genetic Algorithms, 1586
- Structural response**  
Determining Equivalent Linear Parameters for Use in a Capacity Spectrum Method of Analysis, 1445  
Efficient Computation of Response Sensitivities for Inelastic Structures, 1464  
Event-Driven Control System for Geographically Distributed Hybrid Simulation, 1446  
Midply Wood Shear Wall System: Concept and Performance in Static and Cyclic Testing, 1578  
Modeling Response of Flexible High-Aspect-Ratio Wings to Wind Turbulence, 70  
Structural Response of Elements Combining Ultra-high-Performance Fiber-Reinforced Concretes and Reinforced Concrete, 1615
- Structural safety**  
Case Study: Application of GPR to Detection of Hidden Dangers to Underwater Hydraulic Structures, 932  
Increased Snow Loads and Wind Actions on Existing Buildings: Reliability of the Norwegian Building Stock, 1618  
Lagrangian Approach to Structural Collapse Simulation, 516  
Preventing Disproportionate Collapse, 1396
- Structural stability**  
Auto-Parametric Vibration of a Cable-Stayed-Beam Structure under Random Excitation, 463  
Behavior of Steel Double-Channel Built-Up Chords of Special Truss Moment Frames under Reversed Cyclic Bending, 1571  
Identification of the Location and Level of Damage in Multiple-Bolted-Joint Structures by PZT Actuator-Sensors, 1469  
Local-Plate and Distortional Postbuckling Behavior of Cold-Formed Steel Lipped Channel Columns with Intermediated Stiffeners, 1491  
Probabilistic Stability Analyses of Embankments Based on Finite-Element Method, 911  
Sequential Hybrid Inverse Mapping for State-Specified Design of Frames, 1581  
Shear-Flexural Buckling of Cantilever Columns under Uniformly Distributed Load, 557  
Short-Term Structural Instability under Random Dynamic Loads, 568  
Stability Requirements for Beams in Seismic Steel Moment Frames, 1570  
Strength and Stiffness of Conventional Bridging Systems for Cold-Formed Cee Studs, 1493
- Structural steels**  
Recent Progress in the Modeling of Corrosion of Structural Steel Immersed in Seawaters, 1152
- Structural strength**  
Performance in Fire of Small-Scale CFRP Strengthened Concrete Beams, 239  
Predicting the Shear Strength of Mechanical Clinching in Cold-Formed Steel Structures, 1308
- Structure reinforcement**  
Flexural Load Testing of Concrete-Filled FRP Tubes with Longitudinal Steel and FRP Rebar, 204  
Implementing a B2B e-Work System to the Approval Process of Rebar Design and Estimation, 248

## Struts

### Struts

Innovative Central Opening Strut System for Foundation Excavation, 293

Size Effect on Shear Strength of Deep Beams: Investigating with Strut-and-Tie Model, 1507

Strut-and-Tie Design Methodology for Three-Dimensional Reinforced Concrete Structures, 1531

Transverse Analysis of Strutted Box Girder Bridges, 107

### Students

Engineering Experience and Competitions Implement ABET Criteria, 1419

Gaining Retention and Achievement for Students Program: A Faculty Development Program, 1424

### Studs

Buckling of Conventionally Sheathed Stud Walls, 1514

Composite T-Beams using Reduced-Scale Rectangular FRP Tubes and Concrete Slabs, 205

Experimental Capacity Assessment of Cold-Formed Boxed Stud and C Stud Wall Systems used in Australian Residential Construction, 1502

Strength and Stiffness of Conventional Bridging Systems for Cold-Formed Cee Studs, 1493

### Subcontractors

Proposed Subcontractor-Based Employee Motivational Model, 303

### Subcritical flow

Analytical Solution of the Burgers Equation for Simulating Translatory Waves in Conveyance Channels, 951

### Subgrades

Factors Affecting Portable Falling Weight Deflectometer Measurements, 853

Rational Approach for Base Type Selection, 1746

Reclaimed Hydrated Fly Ash as a Geomaterial, 1283

Stabilizing Soft Fine-Grained Soils with Fly Ash, 1291

Three-Dimensional Pavement Analysis with Nonlinear Subgrade Materials, 1321

### Subirrigation

Combination Subsurface Irrigation and Drainage Systems in North-Central South Dakota, 1169

### Submarine pipelines

Improved Analysis Method for Wave-Induced Pipeline Stability on Sandy Seabed, 1727

Stability of Submarine Pipelines on Liquefied Seabeds, 1878

### Submerged flow

Dimensionless Stage – Discharge Relationship in Radial Gates, 1184

Physical and Numerical Comparison of Flow over Ogee Spillway in the Presence of Tailwater, 1068

### Submerged jets

Scour Downstream of an Apron Due to Submerged Horizontal Jets, 957

### Substrates

Three-Parameter Model for Debonding of FRP Plate from Concrete Substrate, 485

### Substructures

Seismic Performance of Concrete-Filled FRP Tube Columns for Bridge Substructure, 139

## 2006 ASCE TRANSACTIONS

### Subsurface drainage

Standard Guidelines for the Design of Urban Subsurface Drainage (ASCE/EWRI 12-05); Standard Guidelines for the Installation of Urban Subsurface Drainage (ASCE/EWRI 13-05); and Standard Guidelines for the Operation and Maintenance of Urban Subsurface Drainage (ASCE/EWRI 14-05), 2090

### Subsurface environment

Development of a Field Design for In Situ Gaseous Treatment of Sediment Based on Laboratory Column Test Data, 769

Hydraulic Conductivity of Soil Sorptive Zones Created by In Situ Injection of a Cationic Surfactant, 773

Intelligent Utility Locating Tool for Excavators, 379

Resistance Survey of the Subsurface Conditions in the Estuary of the Rio de la Plata, 784

### Subsurface flow

Efficient Solution of the Coupled One-Dimensional Surface – Two-Dimensional Subsurface Flow during Furrow Irrigation Advance, 1206

Sensitivity Analysis of Soil Hydraulic Properties on Subsurface Water Flow in Furrows, 1211

Watershed Surface and Subsurface Spatial Intraflows Model, 1071

### Subsurface investigations

Detection of Illegal Dump Deposit with GPR: Case Study, 1955

### Subsystems

Effect of Internal Moment Release on the Eigenfrequencies of Combined Linear Systems, 519

### Suburbs

Analyzing the Impacts of Microscale Urban Attributes on Travel: Evidence from Suburban Adelaide, Australia, 1787

### Subways

Battery-Joralemon Street Tunnel, 1374

Shifts in Activity Centers along the Corridor of the Blue Subway Line in Taipei, 1773

### Suction

Case History of Geosynthetic Reinforced Segmental Retaining Wall Failure, 921

Hysterisis of Matrix Suction and Capillary Stress in Monodisperse Disk-Shaped Particles, 490

Soil-Water Characteristic Curves of Stabilized Expansive Soils, 846

Suction Stress Characteristic Curve for Unsaturated Soil, 791

### Sulfates

Biodegradability of Surfactants under Aerobic, Anoxic, and Anaerobic Conditions, 613

Natural Attenuation Assessment using Mineral Data, 1968

Predicting Residual Strength in Unsaturated Concrete Exposed to Sulfate Attack, 1298

Small-Strain Shear Moduli of Chemically Stabilized Sulfate-Bearing Cohesive Soils, 808

### Sulfides

Natural Attenuation Assessment using Mineral Data, 1968

## SUBJECT INDEX

### Sulfur

Sulfur Impregnation on Activated Carbon Fibers through H<sub>2</sub>S Oxidation for Vapor Phase Mercury Removal, 615

### Supercritical flow

Modeling 3D Supercritical Flow with Extended Shallow-Water Approach, 1024

### Superstructures

Constructability Analysis of the Bridge Superstructure Rotation Construction Method in China, 323

Distribution of Compressive Stresses in Transversely Posttensioned Concrete Bridge Decks, 110

Sensitivity of Live Load Distribution Factors to Vehicle Spacing, 117

### Supports

Lessons Learned for Ground Movements and Soil Stabilization from the Boston Central Artery, 868

Shotcrete for Underground Support X, 2086

### Surcharge

Experimental Study of Surcharged Flow at Combining Sewer Junctions, 1058

Numerical Model for Reinforced Soil Segmental Walls under Surcharge Loading, 841

### Surf zone

Distributions of Wave Steepness and Surf Parameter, 1855

Modeling Near-Shore Waves, Surface Rollers, and Undertow Velocity Profiles, 1896

### Surface irrigation

Model for the Simulation of Water Flows in Irrigation Districts. I: Description, 1199

Model for the Simulation of Water Flows in Irrigation Districts. II: Application, 1200

Modified Kostiakov Infiltration Function: Accounting for Initial and Boundary Conditions, 1230

### Surface jets

Entrainment Properties of Plane Surface-Jets in Shallow Current, 967

### Surface roughness

Exposure Categories and Transitions for Design Wind Loads, 1612

Statistical Modeling of User Perceptions of Infrastructure Condition: Application to the Case of Highway Roughness, 1677

### Surface waters

Equilibrium Approach to Integrating Regional Surface Water Treatment and Limited Groundwater Pumping Capacity, 1847

Hydrologic Modeling Inventory: Cooperative Research Effort, 1175

Impact of Agriculture on Water Quality in the North Carolina Middle Coastal Plain, 1191

One-Dimensional Model of Shallow Water Surface Waves Generated by Landslides, 977

Time-Step Dependency of Infiltration Errors in the HSPF Model, 1102

### Surface waves

Fully Nonhydrostatic Modeling of Surface Waves, 479

One-Dimensional Model of Shallow Water Surface Waves Generated by Landslides, 977

### Sustainable development

Three-Dimensional Linear and Simplified Nonlinear Soil Response Methods Based on an Input Wave Field, 46

### Surface-active agents

Biotreatment of Surfactant Flush Wastewater from Wood Treatment Soil, 595

### Surge

Performances of Hydraulics and Bedload Sediment Flushing in Rigid Channel using Surge Flows, 1183

### Surveys

Deflection of the Vertical Components from GPS and Precise Leveling Measurements in Hong Kong, 1654

Design and Installation of Deep Benchmarks in Expansive Soil, 1658

Determination of Point Displacements in the Geodetic Network, 1648

Determining Free Flight Performance by Surveying Engineering Techniques, 1653

Distribution of Methylmercury in a Mercury-Contaminated Ecosystem, 1961

Evaluating the Effectiveness of State Department of Transportation Investment Decisions: Linking Performance Measures to Resource Allocation, 1159

GPS Precise Point Positioning Software for Ground Control Point Establishment in Remote Sensing Applications, 1642

Precise Height Determination using Leap-Frog Trigonometric Levelling, 1657

Statistics of Range of a Set of Normally Distributed Numbers, 1662

Survey of the Construction Industry Relative to the use of CPM Scheduling for Construction Projects, 357

### Suspended load

Breaking Antidunes: Cyclic Behavior due to Hysteresis, 993

### Suspended sediments

Diagonal Cartesian Method for the Numerical Simulation of Flow and Suspended Sediment Transport over Complex Boundaries, 1053

Lateral Variations in Suspended Sediment Concentration over Dunes, 1066

Rate of Deposition of Fine Sediment from Suspension, 985

### Suspended solids

Analytic Solution on Critical Suspended Particle Size and Minimum Collection Efficiency in Deep Bed Filtration, 741

New Process Design Procedure for Dealing with Variable Trickling Filter Effluent Suspended Solids, 684

Respirometric Assessment of Primary Sludge Fermentation Products, 590

### Sustainable development

Behavior of Beam-Column Joints made of Sustainable Concrete under Cyclic Loading, 1336

Constructability Practices to Manage Sustainable Building Knowledge, 91

Educating Engineers to Create a Sustainable Future, 631

Examining the Business Impact of Owner Commitment to Sustainability, 326

Lean Processes for Sustainable Project Delivery, 395

Organic Hazardous Substances in Graywater from Swedish Households, 700

## Sustainable development

- Stabilizing Soft Fine-Grained Soils with Fly Ash, 1291  
Study of Total Maximum Daily Load and Nonpoint Source Pollution Control Strategies for Reservoir Watershed, 1954  
Survey of Sustainable Building Design Practices in North America, Europe, and Asia, 88  
Transportation System Sustainability Issues in High-, Middle-, and Low-Income Economies: Case Studies from Georgia (U.S.), South Korea, Colombia, and Ghana, 1793

## Sweden

- Handling of Urban Snow with Regard to Snow Quality, 612  
Organic Hazardous Substances in Graywater from Swedish Households, 700

## Swelling

- Influence of Water on Alkali-Silica Reaction: Experimental Study and Numerical Simulations, 1328  
Microanalytical Characterizations of Eroded and Slaked Mudstone Proposed as Landfill Liner Material, 1953  
Soil-Water Characteristic Curves of Stabilized Expansive Soils, 846

## Symmetry

- Symmetric Catenary of a Uniform Elastic Cable of Neo-Hookean Material, 509

## Synthetic materials

- Thermoelastic Enhancement of Damping of Sand using Synthetic Ground Rubber, 824

## System reliability

- Assessing the Financial Feasibility of Utility-Provided Backup Power during Project Site Planning, 419  
Computing Travel Time Reliability in Transportation Networks with Multistates and Dependent Link Failures, 282  
Consequence Management Optimization for Contaminant Detection and Isolation, 1829  
Disaster Recovery System Model with E-Government Case Study, 1937  
Joint First-Passage Probability and Reliability of Systems under Stochastic Excitation, 441  
Reduction of Physical Threats to Water Distribution Systems, 1822  
Solution for Water Distribution Systems under Pressure-Deficient Conditions, 1818

## Systems management

- Best Practices of Bridge System Management—A Synthesis, 1258

## Tailings

- Effect of Structure on the Geotechnical Properties of Bauxite Residue, 792

## Tailwater

- Clear Water Local Scour by Submerged Three-Dimensional Wall Jets: Effect of Tailwater Depth, 989

- Physical and Numerical Comparison of Flow over Ogee Spillway in the Presence of Tailwater, 1068

## Taiwan

- Bridge Blockage and Overbank Flow Simulations using HEC-RAS in the Keelung River during the 2001 Nari Typhoon, 963

## 2006 ASCE TRANSACTIONS

- Coordinate Transformation between Two Geodetic Datums of Taiwan by Least-Squares Collocation, 1649

- Dynamic Routing Model with Real-time Roughness Updating for Flood Forecasting, 992

- Liquefaction-Induced Lateral Spreading in Near-Fault Regions during the 1999 Chi-Chi, Taiwan Earthquake, 922

- Local Geoid Improvement using GPS and Leveling Data: Case Study, 1655

- Multiojective Strategic Evaluation for Urban Development in Kaohsiung, Taiwan: Case Study, 1791

- Risk Factors to Driver Fatalities in Single-Vehicle Crashes: Comparisons between Non-Motorcycle Drivers and Motorcyclists, 1687

- Shifts in Activity Centers along the Corridor of the Blue Subway Line in Taipei, 1773

## Tanks

- Design Analysis for Buckling of Tanks and Silos, 1443

- Laboratory Measurements of Bed Load Sediment Transport Dynamics, 1875

## Taxation

- Future Environmental Regulation Issues to Promote Energy Efficiency, 427

## TCE

- Anaerobic Biodegradation of RDX and TCE: Single- and Dual-Contaminant Batch Tests, 1949

- Biodegradation of Tetrachloroethene by Chitin Fermentation Products in a Continuous Flow Column System, 673

- Field Investigation at a Chlorinated Ethylene Contaminated Site, 1963

- Field Monitoring of a Permeable Reactive Barrier for Removal of Chlorinated Organics, 605

- Multyear Temporal Changes in Chlorinated Solvent Concentrations at 23 Monitored Natural Attenuation Sites, 672

- Remediation of a TCE Plume using a Three-Component Strategy, 1952

- Simultaneous and Sequential Photosolysis of TCE and PCE, 586

## Teaching methods

- Educational Architecture-Oriented Software Linking Conceptual Design and Solar Intensity, 93

- Gaining Retention and Achievement for Students Program: A Faculty Development Program, 1424

- Soils Magic: Bringing Civil Engineering to the K-12 Classroom, 1417

## Teamwork

- Case for Drug Testing of Construction Workers, 1242

## Technology

- Airfield and Highway Pavement: Meeting Today's Challenges with Emerging Technologies, 2047

- Applications of Advanced Technology in Transportation, 2049

- Innovations in Earthmoving Equipment: New Forms and Their Evolution, 386

- Offshore Technology in Civil Engineering: Hall of Fame Papers from the Early Years, 2077

- Structural Insulated Panels: Impact on the Residential Construction Process, 366

- Systems Analysis of Technical Advancement in Earthmoving Equipment, 385

- The Widening Gulf, 2027

## SUBJECT INDEX

## Tension

### Technology assessment

Construction IT Decision Making Using Multiattribute Utility Theory for Use in a Laboratory Information Management System, 414

### Telecommunication

Creating a New School of Computer Science and Engineering in Kansas City, 1912

Transportation Choices and Air Pollution Effects of Telework, 1149

### Telescopes

Remarkable Rotation, 1994

### Temperature

Behavior of High Strength Structural Steel at Elevated Temperatures, 1631

Catalytic Incineration of Acrylonitrile with Platinum Supported on  $\text{Al}_2\text{O}_3$ , 751

Effect of Pressure Fluctuations on the Quality of Fluidization and on the Generation of Particulate Matters during Incineration, 708

Effect of Torsion on Limiting Temperature of Steel Structures in Fire, 1512

Finite-Element Modeling and Calibration of Temperature Prediction of Hydrating Portland Cement Concrete Pavements, 1295

High-Strength Self-Compacting Concrete Exposed to Fire Test, 1349

Hydrodynamic Characterization and Modeling of the Arabian Gulf, 1859

Hydrogen Production by Plasma Electrolysis, 431

Material-Related Aspects of Asphalt Recycling—State-of-the-Art, 1270

New Static Sunshade Design for Energy-Efficient Buildings, 422

Recent Progress in the Modeling of Corrosion of Structural Steel Immersed in Seawaters, 1152

Simulation of Lead Ions Adsorption onto the Iron-Coated Medium: Dependent on Temperature and pH, 1942

Spatial Moment Analysis for One-Dimensional Non-isothermal Quartz Transport and Dissolution/Precipitation in Fracture-Matrix System, 1106

Sustainability and Economics of the Advanced High-Temperature Reactor, 432

Thermochemical Analysis in the Presintering Phase of Aggregates from Sludge-Marine Clay Mixes, 1267

### Temperature effects

Air/Water Oxygen Transfer in a Biological Aerated Filter, 603

Cyclic Lateral Load Response of Bridge Column-Foundation-Soil Systems in Freezing Conditions, 1611

Durability of FRP Composite Bridge Deck Materials under Freeze-Thaw and Low Temperature Conditions, 147

Effect of Early-Age Temperature Rise on the Stability of Rapid-Hardening Cement Fiber Composites, 1325

Effect of Slab-Base Interaction on Measured Concrete Pavement Responses, 1707

Effects of Environmental Action on Thermal Stress Analysis of Karaj Concrete Arch Dam, 487

Enhancement of Anaerobic Digestion of Excess Municipal Sludge with Thermal and/or Oxidative Treatment, 670

Evaluation of Viscosity Values for Mixing and Compaction Temperatures, 1322

Experimental Evaluation of Engineering Behavior of Soft Bangkok Clay under Elevated Temperature, 862

Impact of Temperature Gradient on Modulus of Asphaltic Concrete Layers, 1316

Influence of Temperature and Pressure on the Dynamic Properties of Rubber-Modified Asphalt Concrete, 1275

Low-Temperature Soil Heating using Renewable Energy, 659

Macro- and Microstructural Investigations on Strength and Durability of Pumice Concrete at High Temperature, 1320

Model to Predict Pavement Temperature Profile: Development and Validation, 1679

Sludge Blanket Height and Flow Pattern in UASB Reactors: Temperature Effects, 699

Theoretical and Experimental Analysis of GFRP Bridge Deck under Temperature Gradient, 153

### Tendons

Modified Skew Bending Model for Segmental Bridge with Unbonded Tendons, 109

Vibrational Tension Measurement of External Tendons in Segmental Posttensioned Bridges, 161

### Tennessee

Case Study of a High-Performance Concrete Bridge in Tennessee, 1992

Concentration—Duration—Frequency Curves for pH in a Stream in the Great Smoky Mountains, 765

### Tensile strength

Application of Weibull Statistics to the Tensile Strength of Rock Aggregates, 850

Characterization of Material Properties of HPS-485W (70 W) TMCP for Bridge Girder Applications, 114

Development of Mix Design Procedure for Cold In-Place Recycling with Foamed Asphalt, 1274

General Analytical Framework for Design of Flexible Reinforced Earth Structures, 909

Modeling of Multilayer Composite Fabrics for Gas Turbine Engine Containment Systems, 62

Residual Stress Measurement of Welded Aluminum Light Pole Supports, 1597

Residual Tensile Properties of GFRP Reinforcing Bars after Loading in Severe Environments, 226

Tensile Bond Strength of Soil-Cement Block Masonry Couplets using Cement-Soil Mortars, 1265

Tensile Strength Bearing Ratio and Slake Durability of Class F Fly Ash Stabilized with Lime and Gypsum, 1263

Tension Stiffening Model for Concrete Beams Reinforced with Steel and FRP Bars, 1363

### Tensile stress

Determining the Tensile Stress-Crack Opening Curve of Concrete by Inverse Analysis, 449

Development of Tensile Hoop Stress during Horizontal Directional Drilling through Sand, 48

### Tension

Accelerating the Construction of a Highway Bridge in Ohio, 1980

Internal Forces for Statically Indeterminate Structures having Different Moduli in Tension and Compression, 508

Polyethylene Duct Cracking on Posttensioning Tendons in Florida Segmented Bridges, 1327

## Tension

- Water Transport in Concrete Damaged by Tensile Loading and Freeze-Thaw Cycling, 1307  
**Tension structures**  
Nonlinear Analytical Solution for Cable Truss, 446  
Topological Mapping for Tension Structures, 1535  
**Terrorism**  
Bayesian Belief Networks to Integrate Monitoring Evidence of Water Distribution System Contamination, 1825  
Blast-Resistant Glazing Design, 97  
Comparative Analysis of Water Vulnerability Assessment Methodologies, 1146  
Comparison of Physical Sampling and Real-Time Monitoring Strategies for Designing a Contamination Warning System in a Drinking Water Distribution System, 1834  
Consequence Management Optimization for Contaminant Detection and Isolation, 1829  
Contaminant Warning in Water Networks: General Mixed-Integer Linear Models for Sensor Location Design, 1824  
Contamination Source Identification in Water Systems: A Hybrid Model Trees-Linear Programming Scheme, 1828  
Delay between Sensing and Response in Water Contamination Events, 1145  
Global System Considerations for Progressive Collapse with Extensions to Other Natural and Man-Made Hazards, 1406  
Impacts of the 2001 World Trade Center Attack on New York City Critical Infrastructures, 1163  
Lessons Learned from an Emergency Bridge Replacement Project, 321  
Locating Monitors in Water Distribution Systems: Red Team-Blue Team Exercise, 1832  
Methodology for Locating Monitoring Stations to Detect Contamination in Potable Water Distribution Systems, 1162  
Operational Response Model for Physically Attacked Water Networks using NSGA-II, 283  
Rapid Bridge Replacement under Emergency Situation: Case Study, 130  
Reduction of Physical Threats to Water Distribution Systems, 1822  
Robust Mobile Ad Hoc Space for Collaboration to Support Disaster Relief Efforts Involving Critical Physical Infrastructure, 247  
Security Barrier Design, 1981  
Sensor Placement in Municipal Water Networks with Temporal Integer Programming Models, 1823  
Static Equivalency in Progressive Collapse Alternate Path Analysis: Reducing Conservatism While Retaining Structural Integrity, 1401  
Terrorism Risks and Blast Damage to Built Infrastructure, 1933  
**Tests**  
Airfield and Highway Pavement: Meeting Today's Challenges with Emerging Technologies, 2047  
Blind Test Results for Nondestructive Damage Detection in a Steel Frame, 1520  
Determination of Required Falling Weight Deflectometer Testing Frequency for Pavement Structural Evaluation at the Network Level, 1671  
Determining the Tensile Stress-Crack Opening Curve of Concrete by Inverse Analysis, 449

## 2006 ASCE TRANSACTIONS

- Geomechanics II — Testing, Modeling, and Simulation, 2069  
Methodology for Usability Evaluation of Corporate Memory Design Reuse Systems, 274  
Soil-Pile Response to Blast-Induced Lateral Spreading, II: Analysis and Assessment of the  $p-y$  Method, 794  
Statistical Mixed Effects Models for Evaluation and Prediction of Accelerated Pavement Testing Results, 1748  
**Texas**  
Benefit-Cost Analysis of Variable Pricing Projects: QuickRide HOT Lanes, 1682  
Crew Production Rates for Contract Time Estimation: Beam Erection, Deck, and Rail of Highway Bridges, 328  
Determination of Required Falling Weight Deflectometer Testing Frequency for Pavement Structural Evaluation at the Network Level, 1671  
Dioxin in Storm-Water Runoff in Houston, Texas, 770  
Evaluation of the Trans-Texas Corridor Proposal: Application and Enhancements of the Random Utility-Based Multiregional Input — Output Model, 1720  
Failure Investigation of a Foamed-Asphalt Highway Project, 1140  
Instantaneous Unit Hydrograph Evaluation for Rainfall-Runoff Modeling of Small Watersheds in North and South Central Texas, 1218  
Integrated Economic, Hydrologic, and Institutional Analysis of Policy Responses to Mitigate Drought Impacts in Rio Grande Basin, 1851  
Lessons Learned on Jointed Concrete Pavement Rehabilitation Strategies in Texas, 1690  
Methods for Developing Naturalized Monthly Flows at Gaged and Ungaged Sites, 1076  
Stochastic Optimization of the Highland Lakes System in Texas, 1807  
**Textiles**  
Application of Polymers to Textile-Reinforced Concrete, 1338  
**Theories**  
Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Theory, 1186  
Characteristics for Leveraging Value Management Processes on Capital Facility Projects, 1253  
Lean Construction: From Theory to Implementation, 1256  
A Stochastic Transformation Field Theory for Heterogeneous Materials, 564  
Tuning of Robust Distant Downstream PI Controllers for an Irrigation Canal Pool. I: Theory, 1204  
**Thermal analysis**  
Heat Flow through Soils and Effects on Thermal Storage Cycle in High-Mass Structures, 64  
Thermochemical Analysis in the Presintering Phase of Aggregates from Sludge-Marine Clay Mixes, 1267  
**Thermal energy**  
Double-Pass Photovoltaic-Thermal Solar Air Collector with Compound Parabolic Concentrator and Fins, 433  
Hydrogen Production by Plasma Electrolysis, 431

## SUBJECT INDEX

### Thermal factors

- Analyses of Heated Concrete Spalling due to Restrained Thermal Dilation: Application to the "Chunnel" Fire, 552  
Application of Hygrothermal Modeling Tool to Assess Moisture Response of Exterior Walls, 101  
Decreasing Measuring Errors of a Thermal Ground-water Flowmeter, 1195  
Finite-Element Modeling and Calibration of Temperature Prediction of Hydrating Portland Cement Concrete Pavements, 1295  
High-Strength Self-Compacting Concrete Exposed to Fire Test, 1349  
Metakaolin as an Extender in South African Cement, 1332  
Temporal Thermal Behavior and Damage Simulations of FRP Deck, 148  
Thermal Compatibility and Durability of Wearing Surfaces on GFRP Bridge Decks, 149

### Thermal gradient

- Theoretical and Experimental Analysis of GFRP Bridge Deck under Temperature Gradient, 153

### Thermal powerplants

- Case Study: Sediment Control at Water Intake for Large Thermal-Power Station on a Small River, 975

### Thermal properties

- Heat Flow through Soils and Effects on Thermal Storage Cycle in High-Mass Structures, 64  
Multifunctional Hybrid GFRP/Steel Joint for Concrete Slab Structures, 244

### Thermal stratification

- Circulation in Stratified Lakes due to Flood-Induced Turbidity Currents, 754

### Thermal stresses

- Coupled Heat-Deformation-Flow Analysis for Clayey Soil, 826  
Effects of Environmental Action on Thermal Stress Analysis of Karaj Concrete Arch Dam, 487  
Theoretical and Experimental Analysis of GFRP Bridge Deck under Temperature Gradient, 153

### Thermodynamics

- Compressibility Moduli for Porous Materials Incorporating Volume Fraction, 562  
Coupled Heat-Deformation-Flow Analysis for Clayey Soil, 826  
Identification and Interpretation of Microplane Material Laws, 465  
Method for Measuring Air-Immiscible Liquid Partition Coefficients, 599  
Pressure Drop as a Criterion of a Steam-Turbine Plant's Efficiency, 423

### Thermoelasticity

- Laplace Boundary Element Model for the Thermoelastic Consolidation of Multilayered Media, 25  
Porothermoelastic Analysis of the Response of a Stationary Crack using the Displacement Discontinuity Method, 437

### Thickness

- Accuracy of Ground-Penetrating Radar for Pavement-Layer Thickness Analysis, 1673  
Axisymmetric Nonlinear Stability of a Shallow Conical Shell with a Spherical Cap of Arbitrary Variable Shell Thickness, 555

## Three-dimensional models

- Postbuckling of Moderately Thick Imperfect Rings under External Pressure, 569  
Vibration of Open Cylindrical Shells with Stepped Thickness Variations, 514  
**Thin wall sections**  
Complex Edge Stiffeners for Thin-Walled Members, 1459  
Design Provisions for Sections Containing Unstiffened Elements with Stress Gradient, 8  
Distortional Buckling of Cold-Formed Steel Members, 1503  
Performance Evaluation of FRP Bridge Deck Component under Torsion, 146  
Service-Stage Analysis of Curved Composite Steel-Concrete Bridge Beams, 1629  
Spatial Stability of Shear Deformable Nonsymmetric Thin-Walled Curved Beams: A Centroid-Shear Center Formulation, 573  
**Thin wall structures**  
Distortional Buckling Tests on Cold-Formed Steel Beams, 1490  
**Three-dimensional analysis**  
Computation of Mixed-Mode Stress Intensity Factors for Cracks in Three-Dimensional Functionally Graded Solids, 435  
Computation of Short-Crested Deepwater Waves, 1870  
GIS-Based Implementation of Three-Dimensional Limit Equilibrium Approach of Slope Stability, 839  
Modeling Steel Frame Buildings in Three Dimensions. I: Panel Zone and Plastic Hinge Beam Elements, 470  
Modeling Steel Frame Buildings in Three Dimensions. II: Elasto-fiber Beam Element and Examples, 471  
Single Hardening Elasto-Plastic Model for Kaolin Clay with Loading-History-Dependent Plastic Potential Function, 17  
Strut-and-Tie Design Methodology for Three-Dimensional Reinforced Concrete Structures, 1531  
Three-Dimensional Free Vibration Analysis of Multi-phase Piezocomposite Structures, 524  
Three-Dimensional Pavement Analysis with Nonlinear Subgrade Materials, 1321  
**Three-dimensional flow**  
Case Study: Refinement of Hydraulic Operation of a Complex CSO Storage/Treatment Facility by Numerical and Physical Modeling, 944  
Numerical and Experimental Study on Ship Wash Including Wave-Breaking on Shore, 1889  
Parallel Multigrid Detached Eddy Simulation Algorithm for Three-Dimensional Unsteady Incompressible Flows on Unstructured Meshes, 82  
**Three-dimensional models**  
3D Model Application to Study Residual Flow in the Arabian Gulf, 1891  
3D Simulation of Combining Flows in 90° Rectangular Closed Conduits, 954  
Customizing Visualization in Three-Dimensional Urban GIS via Web-Based Interaction, 1782  
Development and Validation of a Quasi-Three-Dimensional Coastal Area Morphological Model, 1900  
Experimental Study and 3D Numerical Simulations for a Free-Overflow Spillway, 1022

## Three-dimensional models

- Human-Assisted Obstacle Avoidance System using 3D Workspace Modeling for Construction Equipment Operation, 262  
Model for Three-Dimensional Highway Alignment, 1764  
Modeling 3D Supercritical Flow with Extended Shallow-Water Approach, 1024  
New Approach to Determine Three-Dimensional Contacts in Blocks System: Penetration Edges Method, 42  
Potential of Augmented Reality as an Assistant Viewer for Computer-Aided Drawing, 280  
Sediment Transport over Ripples in Oscillatory Flow, 950  
Three-Dimensional Modeling for Estimation of Hydraulic Retention Time in a Reservoir, 710  
Validation of a Three-Dimensional Computational Fluid Dynamics Model of a Contact Tank, 1005  
Water Exchange and Sedimentation in an Estuarine Tidal Harbor using Three-Dimensional Simulation, 1893
- Thrust**  
Active Thrust Due to Backfill Subject to Lines of Surge, 805  
Minor Axis Moment-Thrust Response Behavior in Steel I-Shaped Members, 1544
- Tidal currents**  
Cross-Shore Internal Waves in Zanpa Coastal Region of Okinawa Island, 1858
- Tidal effects**  
EOF Analysis of Complex Response of Venice Mobile Gates, 1872  
Stage-Discharge Relations for Low-Gradient Tidal Streams using Data-Driven Models, 979
- Tidal waters**  
Compilation of a Map of Recent Vertical Crustal Movements in Eastern Canada using Geographic Information System, 1663
- Tides**  
Comparison of SF<sub>6</sub> and Fluorescein as Tracers for Measuring Transport Processes in a Large Tidal River, 774  
Compilation of a Map of Recent Vertical Crustal Movements in Eastern Canada using Geographic Information System, 1663  
EOF Analysis of Complex Response of Venice Mobile Gates, 1872  
Hydrodynamic Characterization and Modeling of the Arabian Gulf, 1859  
Three-Dimensional Modeling of the Ruwais Coastal Area of United Arab Emirates, 1902  
Water Exchange and Sedimentation in an Estuarine Tidal Harbor using Three-Dimensional Simulation, 1893
- Ties**  
Strut-and-Tie Design Methodology for Three-Dimensional Reinforced Concrete Structures, 1531
- Timber construction**  
Buckling of Conventionally Sheathed Stud Walls, 1514  
Effectiveness of GFRP Sheets for Shear Strengthening of Timber, 237  
Finite-Element Modeling of Timber Joints with Punched Metal Plate Fasteners, 1479

## 2006 ASCE TRANSACTIONS

- Long-Term Behavior of Timber-Concrete Composite Beams. I: Finite Element Modeling and Validation, 1440  
Long-Term Behavior of Timber-Concrete Composite Beams. II: Numerical Analysis and Simplified Evaluation, 1441  
Performance of Wood Shear Walls Sheathed with FRP-Reinforced OSB Panels, 1453  
Racking Performance of Structural Insulated Panels, 1617  
Reversed-Cyclic Behavior of a Novel Heavy Timber Tube Connection, 1568
- Time dependence**  
Behavior of One-Dimensional Consolidation under Time-Dependent Loading, 480
- Long-Term Behavior of Timber-Concrete Composite Beams. I: Finite Element Modeling and Validation, 1440**
- Long-Term Behavior of Timber-Concrete Composite Beams. II: Numerical Analysis and Simplified Evaluation, 1441**
- Porochemoelastic Solution for an Inclined Borehole in a Transversely Isotropic Formation, 510
- Time-Dependent Behavior of Posttensioned Wood Howe Bridges, 1480
- Time factors**  
Accurate Representation of External Force in Time History Analysis, 438
- Application of Lean Concepts and Simulation Analysis to Improve Efficiency of Drainage Operations Maintenance Crews, 317
- Creep Buckling of Shallow Parabolic Concrete Arches, 1601
- Prototype Time-Space Diary Design and Administration for a Developing Country, 1715
- Temporal Variation in Consumer Spatial Behavior in Shopping Streets, 1792
- Time series analysis**  
Approximate Floor Acceleration Demands in Multistory Buildings. I: Formulation, 6
- Efficacy of Hilbert and Wavelet Transforms for Time-Frequency Analysis, 543
- Evaluation of Mixing Energy in Laboratory Flasks used for Dispersant Effectiveness Testing, 593
- Tires**  
Design Issues for Concrete Reinforced with Steel Fibers, Including Fibers Recovered from used Tires, 1339
- Field Evaluation of a Leachate Collection System Constructed with Scrap Tires, 869
- Stochastic Spatial Excitation Induced by a Distributed Contact on Homogenous Gaussian Random Fields, 505
- Toll roads**  
Turnpike Transformation, 2038
- Tolls**  
Benefit-Cost Analysis of Variable Pricing Projects: QuickRide HOT Lanes, 1682  
Benefit-Cost Analysis of Variable Pricing Projects: SR-91 Express Lanes, 1683
- Topographic surveys**  
Real-Time Determination of Orthometric Heights Accurate to the Centimeter Level using a Single GPS Receiver: Case Study, 1640

## SUBJECT INDEX

- Topography**  
Analytical Study of Turbulent Pollutant Dispersion near a Low Hill, 444
- Divergence Form for Bed Slope Source Term in Shallow Water Equations, 997
- Three-Dimensional Topography of Debris-Flow Fan, 962
- Tipon: Water Engineering Masterpiece of the Inca Empire, 2093
- Tornadoes**  
Catastrophe-Induced Destruction and Reconstruction, 1924
- Validation of Finite-Element Analyses for Storm Shelters, 89
- Torsion**  
Behavior of Corrugated Web I-Girders under In-Plane Loads, 517
- Effect of Torsion on Limiting Temperature of Steel Structures in Fire, 1512
- Experimental Investigation on Torsional Behavior of Solid and Box-Section RC Beams Strengthened with CFRP using Photogrammetry, 221
- Influence of Torque on Lateral Capacity of Drilled Shafts in Sands, 820
- New Three-Dimensional Damage Index for RC Buildings with Planar Irregularities, 1585
- Performance Evaluation of FRP Bridge Deck Component under Torsion, 146
- Plastic and Lateral-Torsional Buckling Behavior of Single Cold-Formed Channels Connected Back-to-Back, 1559
- Seismic Reliability of Low-Rise Nonsymmetric Wood-frame Buildings, 1513
- Service-Stage Analysis of Curved Composite Steel-Concrete Bridge Beams, 1629
- Strain Localization in Combined Axial-Torsional Testing on Kaolin Clay, 489
- Toughness**  
Characterization of Material Properties of HPS-485W (70 W) TMCP for Bridge Girder Applications, 114
- Influence of Toughness on the Apparent Cracking Load of Fiber-Reinforced Concrete Slabs, 1634
- Tourism**  
Model for Environmental Risk Assessment of Tourism Project Construction on the Egyptian Red Sea Coast, 729
- Towers**  
Improving Full-Scale Transmission Tower Design through Topology and Shape Optimization, 1518
- Toxicity**  
Evaluation of Decolorization, Mineralization, and Toxicity Reduction of an Azo Dye C.I. Reactive Black 5 in a Countercurrent Bubble Column by Ozone, 1940
- Health Risk Assessment for a Contaminated Site: A Case Study, 1964
- TCLP Heavy Metal Leaching of Personal Computer Components, 638
- Tracers**  
Comparison of SF<sub>6</sub> and Fluorescein as Tracers for Measuring Transport Processes in a Large Tidal River, 774
- Evaluation of Dispersion Coefficients in Meandering Channels from Transient Tracer Tests, 1033
- Traffic delay**  
Method for Measuring Air-Immiscible Liquid Partition Coefficients, 599
- Natural Gradient Tracer Test for a Permeable Reactive Barrier in Denmark. I: Field Study of Tracer Movement, 1966
- Natural Gradient Tracer Test for a Permeable Reactive Barrier in Denmark. II: Spatial Moments Analysis and Dispersion of Conservative Tracer, 1967
- Three-Dimensional Modeling of the Ruwais Coastal Area of United Arab Emirates, 1902
- Use of Boron as a Tracer for Recycled Water in Brackish Aquifers, 696
- Tracking**  
Integration of Construction As-Built Data via Laser Scanning with Geotechnical Monitoring of Urban Excavation, 410
- Traffic accidents**  
Improved Design for Vision-Based Incident Detection in Transportation Systems using Real-Time View Transformations, 1755
- Modeling Crash Types: New Insights into the Effects of Covariates on Crashes at Rural Intersections, 1692
- Risk Factors to Driver Fatalities in Single-Vehicle Crashes: Comparisons between Non-Motorcycle Drivers and Motorcyclists, 1687
- Urban Bicycle Route Safety Rating Model Application in Jersey City, New Jersey, 1716
- Vehicle Collision with Bridge Piers, 1
- Traffic analysis**  
Modeling Network Traffic for Planning Applications in a Small Community, 1790
- Probabilistic Neural Networks Application for Vehicle Classification, 1693
- Traffic characteristics**  
Effects of Traffic Characteristics and Mounting Location on the Visibility of On-Premise Commercial Signs, 1758
- Utilizing Clustering Techniques in Estimating Traffic Data Input for Pavement Design, 1759
- Traffic congestion**  
Moving On, 2018
- Neural Network-Wavelet Microsimulation Model for Delay and Queue Length Estimation at Freeway Work Zones, 1697
- Traffic control**  
Developing Combined Genetic Algorithm — Hill-Climbing Optimization Method for Area Traffic Control, 1736
- Development of an Optimization Methodology for Adaptive Traffic Sign Control at Diamond Interchanges., 1732
- Multibjective Plan Selection Optimization for Traffic Responsive Control, 1702
- Traffic delay**  
Developing Combined Genetic Algorithm — Hill-Climbing Optimization Method for Area Traffic Control, 1736
- Implementation of Automated Travel-Time Information and Public Reaction on Urban Highway Rehabilitation, 1752
- Neural Network-Wavelet Microsimulation Model for Delay and Queue Length Estimation at Freeway Work Zones, 1697

## Traffic engineering

### Traffic engineering

Modeling Network Traffic for Planning Applications in a Small Community, 1790

### Traffic flow

Application of Cement-Based Piezoelectric Sensors for Monitoring Traffic Flows, 1724

Automated Estimation of Average Stopped Delay at Signalized Intersections using Digitized Still-Image Analysis of Actual Traffic Flow, 258

Evaluating the Effectiveness of State Department of Transportation Investment Decisions: Linking Performance Measures to Resource Allocation, 1159

Influence of Pedestrians' Entry Process on Pedestrian Delays at Signal-Controlled Crosswalks, 1757

Issues and Solutions to Macroscopic Traffic Dispersion Modeling, 1723

Lateral Distribution of Mixed Traffic on Two-Lane Roads, 1728

Neural Network-Wavelet Microsimulation Model for Delay and Queue Length Estimation at Freeway Work Zones, 1697

Potential Computational Benefits of Geometric, Kinematic, and Behavioral Downsampling of Macroscopic Traffic Network Simulation, 277

Procedures for Calibrating TRANSYT Platoon Dispersion Model, 1722

Reversible Lane Systems: Synthesis of Practice, 1766

Short-Term Freeway Traffic Flow Prediction: Bayesian Combined Neural Network Approach, 1675

### Traffic management

Algorithm Fusion for Detecting Incidents on Singapore's Central Expressway, 1696

Assessment of the Impact of Improvement Measures on Air Quality: Case Study of Delhi, 1714

Assignment of Seasonal Factor Categories to Urban Coverage Count Stations using a Fuzzy Decision Tree, 1735

Automatic Speed Calibration Methodology for Traffic Monitoring Sites, 1666

Benefit-Cost Analysis of Variable Pricing Projects: QuickRide HOT Lanes, 1682

Corridor Protection through NEPA, 1420

Discrete Choice Model for Defining a Parking-Fee Policy on Island of Ortigia, Siracusa, 1789

Economic Heuristic Optimization for Heterogeneous Fleet VRPHESTW, 1694

Enhancing Short-Term Traffic Forecasting with Traffic Condition Information, 1712

Entropy Models of Trip Distribution, 1774

Evaluation of Speed-Based Travel Time Estimation Models, 1721

Implementation of Automated Travel-Time Information and Public Reaction on Urban Highway Rehabilitation, 1752

Lateral Distribution of Mixed Traffic on Two-Lane Roads, 1728

Methodology to Develop Median Barrier Warrant Criteria, 1691

Multiojective Plan Selection Optimization for Traffic Responsive Control, 1702

Overtaking Rule Method for the Cleaning of Matched License-Plate Data, 1730

Prototype Time-Space Diary Design and Administration for a Developing Country, 1715

Reversible Lane Systems: Synthesis of Practice, 1766

## 2006 ASCE TRANSACTIONS

Route Selection for a New Transportation System in Hillside Urban Areas: A Case Study in Nagasaki, Japan, 1781

Speed Distribution Curves under Mixed Traffic Conditions, 1713

Upstream Signalized Crossover Intersection: An Unconventional Intersection Scheme, 1763

Vehicle Level Evaluation of Loop Detectors and the Remote Traffic Microwave Sensor, 1686

### Traffic models

Estimation of Uniform Delay of Permitted Left Turns from Exclusive Turn Lanes, 1741

Issues and Solutions to Macroscopic Traffic Dispersion Modeling, 1723

Modeling Crash Types: New Insights into the Effects of Covariates on Crashes at Rural Intersections, 1692

Modeling Network Traffic for Planning Applications in a Small Community, 1790

Probabilistic Model for Signalized Intersection Capacity with a Short Right-Turn Lane, 1685

Probabilistic Neural Networks Application for Vehicle Classification, 1693

Procedures for Calibrating TRANSYT Platoon Dispersion Model, 1722

### Traffic safety

Modeling Crash Types: New Insights into the Effects of Covariates on Crashes at Rural Intersections, 1692

Relationship between Speed, Lateral Placement, and Drivers' Eye Movement at Two-Lane Rural Highways, 1734

Safety Impacts of Differential Speed Limits for Trucks and Passenger Cars on Rural Interstate Highways: A Modified Empirical Bayes Approach, 1665

### Traffic signals

Actuated Signal Operations of Congested Diamond Interchanges, 1750

Automated Estimation of Average Stopped Delay at Signalized Intersections using Digitized Still-Image Analysis of Actual Traffic Flow, 258

Corridor Protection through NEPA, 1420

Crashworthiness of Motor Vehicle and Traffic Light Pole in Frontal Collisions, 1743

Development of an Optimization Methodology for Adaptive Traffic Sign Control at Diamond Interchanges, 1732

Estimation of Uniform Delay of Permitted Left Turns from Exclusive Turn Lanes, 1741

Geometric Model to Calculate Left-Turn Sight Distances for Signalized Intersections on Horizontal Curves, 1738

Influence of Pedestrians' Entry Process on Pedestrian Delays at Signal-Controlled Crosswalks, 1757

Issues and Solutions to Macroscopic Traffic Dispersion Modeling, 1723

Probabilistic Model for Signalized Intersection Capacity with a Short Right-Turn Lane, 1685

Procedures for Calibrating TRANSYT Platoon Dispersion Model, 1722

Upstream Signalized Crossover Intersection: An Unconventional Intersection Scheme, 1763

### Traffic signs

3D Calculation of Stopping-Sight Distance from GPS Data, 1739

## SUBJECT INDEX

- Effects of Traffic Characteristics and Mounting Location on the Visibility of On-Premise Commercial Signs, 1758
- Traffic speed**
- Automatic Speed Calibration Methodology for Traffic Monitoring Sites, 1666
  - Collecting Driving Data to Support Mobile Source Emissions Estimation, 1756
  - Corridor Protection through NEPA, 1420
  - Effects of Traffic Characteristics and Mounting Location on the Visibility of On-Premise Commercial Signs, 1758
  - Predicting Speeds in an Urban Right-Turn Lane, 1684
  - Relationship between Speed, Lateral Placement, and Drivers' Eye Movement at Two-Lane Rural Highways, 1734
  - Safety Analysis of Florida Rural Interstate Freeway Travel in Relation to the 65 km/h (40 mi/hr) Minimum Speed Regulation, 1740
  - Safety Impacts of Differential Speed Limits for Trucks and Passenger Cars on Rural Interstate Highways: A Modified Empirical Bayes Approach, 1665
  - Simplified Methodology to Estimate Emissions from Mobile Sources for Ambient Air Quality Assessment, 1753
  - Speed Distribution Curves under Mixed Traffic Conditions, 1713
- Traffic surveillance**
- Algorithm Fusion for Detecting Incidents on Singapore's Central Expressway, 1696
  - Automatic Speed Calibration Methodology for Traffic Monitoring Sites, 1666
  - Development of a Methodology to Predict Through-Trip Rates for Small Communities, 1784
  - Enhancing Short-Term Traffic Forecasting with Traffic Condition Information, 1712
  - Finite-Element Analysis of Tapered Steel and Fiber-Reinforced Plastic Bridge Camera Poles, 164
  - Implementation of Automated Travel-Time Information and Public Reaction on Urban Highway Rehabilitation, 1752
  - Vehicle Level Evaluation of Loop Detectors and the Remote Traffic Microwave Sensor, 1686
- Traffic surveys**
- Borrowing Residential Trip Generation Rates, 1674
  - Discrete Choice Model for Defining a Parking-Fee Policy on Island of Ortigia, Siracusa, 1789
  - Implementation of Automated Travel-Time Information and Public Reaction on Urban Highway Rehabilitation, 1752
- Traffic volume**
- Effects of Traffic Characteristics and Mounting Location on the Visibility of On-Premise Commercial Signs, 1758
  - Improved AADT Estimation by Combining Information in Image- and Ground-Based Traffic Data, 1719
- Training**
- Developing Knowledge Landscapes through Project-Based Learning, 1416
  - Development of New Faculty: Summary of the NSF-CMS WEE Workshop, 1418
  - Linear Programming Approach to Optimize Strategic Investment in the Construction Workforce, 402
  - Measurement Design Is an Opportunity to Learn, 1917
- Transportation corridors**
- Turbocharged Organizational Change through High-Octane Management Training, 1916
  - What Does the Construction Industry Value in its Workers?, 392
- Transcritical flow**
- Breaking Antidunes: Cyclic Behavior due to Hysteresis, 993
- Transformations**
- Efficacy of Hilbert and Wavelet Transforms for Time-Frequency Analysis, 543
  - Stepwise Parameter Estimations in a Time-Variant Similarity Transformation, 1660
  - Transformation, Attenuation, Setup, and Undertow of Internal Waves on a Gentle Slope, 1901
  - Transformation of DDT and its Metabolites by Various Abiotic Methods, 662
- Transient flow**
- Flow Depletion Induced by Pumping Well from Finite Length of Stream, 1222
  - General Validity of Conductivity Means in Unsaturated Flow Models, 1125
  - Godunov-Type Solutions for Transient Flows in Sewers, 1010
  - Improved Simulation of Flow Regime Transition in Sewers: Two-Component Pressure Approach, 987
  - Parallel Multigrid Detached Eddy Simulation Algorithm for Three-Dimensional Unsteady Incompressible Flows on Unstructured Meshes, 82
  - Spatial and Temporal Characteristics of Transient Extreme Wave Profiles on Depth-Varying Currents, 541
- Transient loads**
- Effects of Environmental Action on Thermal Stress Analysis of Karaj Concrete Arch Dam, 487
  - Efficacy of Hilbert and Wavelet Transforms for Time-Frequency Analysis, 543
- Transient response**
- Efficacy of Hilbert and Wavelet Transforms for Time-Frequency Analysis, 543
- Transients**
- Hydraulic Optimization of Transient Protection Devices using GA and PSO Approaches, 1805
  - Numerical Error in Weighting Function-Based Unsteady Friction Models for Pipe Transients, 1001
  - Systematic Evaluation of One-Dimensional Unsteady Friction Models in Simple Pipelines, 1000
- Transport rate**
- Microcosm Approach to Study Transport of Polychlorinated Biphenyls in Sediment, 676
- Transportation**
- Optimal Siting of Fire Stations using GIS and ANT Algorithm, 286
- Transportation corridors**
- Corridor Protection through NEPA, 1420
  - Evaluation of the Trans-Texas Corridor Proposal: Application and Enhancements of the Random-Utility-Based Multiregional Input—Output Model, 1720
  - Shifts in Activity Centers along the Corridor of the Blue Subway Line in Taipei, 1773

## Transportation engineering

### Transportation engineering

- Determining the Content of the First Course in Transportation Engineering, 1423  
System-Wide Data Quality Control of Inductance Loop Data using Nonlinear Optimization, 263

### Transportation management

- Applications of Advanced Technology in Transportation, 2049  
CommunityViz-Based Prototype Model for Assessing Development Impacts in a Naturalized Floodplain—EmiquonViz, 1795  
Considering the Environment in Transportation Planning: Review of Emerging Paradigms and Practice in the United States, 1776  
Considering the Environment in Transportation Planning: Review of Emerging Paradigms and Practice in the United States., 1777

- Decision Methodology for Allocating Funds across Transportation Infrastructure Assets, 1137  
Development of a Methodology to Predict Through-Trip Rates for Small Communities, 1784  
Enhancing Short-Term Traffic Forecasting with Traffic Condition Information, 1712  
Entropy Models of Trip Distribution, 1774  
Evacuation Route Selection Based on Tree-Based Hazards using Light Detection and Ranging and GIS, 1695  
Influence of School Accessibility on Housing Values, 1785  
Modeling and Analysis of the Link between Accessibility and Employment Growth, 1703  
Multiple Tandem Jets in Cross-Flow, 1027  
Probabilistic Neural Networks Application for Vehicle Classification, 1693  
Prototype Time-Space Diary Design and Administration for a Developing Country, 1715  
Transportation Activity Centers for Urban Transportation Analysis, 1800  
Turbocharged Organizational Change through High-Octane Management Training, 1916  
Urban Bicycle Route Safety Rating Model Application in Jersey City, New Jersey, 1716  
Urban Origins/Destinations from High-Resolution Remote Sensing Images, 1783  
Using a Simulated Annealing Algorithm to Solve the Transit Route Network Design Problem, 1676

### Transportation models

- Evaluation of the Trans-Texas Corridor Proposal: Application and Enhancements of the Random-Utility-Based Multiregional Input — Output Model, 1720  
Transportation Activity Centers for Urban Transportation Analysis, 1800

### Transportation networks

- Computing Travel Time Reliability in Transportation Networks with Multistates and Dependent Link Failures, 282  
Discrete Choice Model for Defining a Parking-Fee Policy on Island of Ortigia, Siracusa, 1789  
Effectiveness of Learning Transportation Network Growth through Simulation, 1410  
Evaluating the Effectiveness of State Department of Transportation Investment Decisions: Linking Performance Measures to Resource Allocation, 1159

## 2006 ASCE TRANSACTIONS

- Evaluation of the Trans-Texas Corridor Proposal: Application and Enhancements of the Random-Utility-Based Multiregional Input — Output Model, 1720

- Optimal Transit Route Network Design Problem with Variable Transit Demand: Genetic Algorithm Approach, 1667

### Transportation studies

- Borrowing Residential Trip Generation Rates, 1674

### Transportation systems

- Applications of Advanced Technology in Transportation, 2049

- Evaluation of the Trans-Texas Corridor Proposal: Application and Enhancements of the Random-Utility-Based Multiregional Input — Output Model, 1720

- Hurricane Katrina: Performance of Transportation Systems, 2074

- Improved Design for Vision-Based Incident Detection in Transportation Systems using Real-Time View Transformations, 1755

- Transportation System Sustainability Issues in High-, Middle-, and Low-Income Economies: Case Studies from Georgia (U.S.), South Korea, Colombia, and Ghana, 1793

### Transverse loads

- Numerical Simulations of Dynamic Instability of Elastic-Plastic Beams, 461

### Travel demand

- Borrowing Residential Trip Generation Rates, 1674

- Using a Simulated Annealing Algorithm to Solve the Transit Route Network Design Problem, 1676

### Travel patterns

- Analyzing the Impacts of Microscale Urban Attributes on Travel: Evidence from Suburban Adelaide, Australia, 1787

- Transportation Activity Centers for Urban Transportation Analysis, 1800

### Travel time

- Computing Travel Time Reliability in Transportation Networks with Multistates and Dependent Link Failures, 282

- Evaluation of Speed-Based Travel Time Estimation Models, 1721

- Irrigation Scheduling with Travel Times, 1188

- Overtaking Rule Method for the Cleaning of Matched License-Plate Data, 1730

- Reliable Real-Time Framework for Short-Term Freeway Travel Time Prediction, 1765

- Using GPS to Measure the Impact of Construction Activities on Rural Interstates, 339

### Trees

- Evacuation Route Selection Based on Tree-Based Hazards using Light Detection and Ranging and GIS, 1695

- Watershed-Scale Impacts of Forest Buffers on Water Quality and Runoff in Urbanizing Environment, 1815

### Trenches

- Assessing Damage to Airport Pavement Structure due to Complex Gear Loads, 1761

## SUBJECT INDEX

## Tubes

### Trenchless technology

Development of Tensile Hoop Stress during Horizontal Directional Drilling through Sand, 48

Pipelines 2006 — Service to the Owner, 2080

Utilization of Trenchless Construction Methods in Mainland China to Sustain Urban Infrastructure, 1984

### Triaxial compression

Compression Field Modeling of Confined Concrete: Constitutive Models, 1318

Input Parameters of Discrete Element Methods, 506

Laboratory Studies of Two Common Saprolitic Soils in Hong Kong, 864

### Triaxial shear

Drained and Undrained Strength Interpretation for Low-Plasticity Silts, 802

### Triaxial tests

Comparative Study of Different Subbase Materials, 1326

Constitutive Model for Rockfill Materials and Determination of Material Constants, 35

Double Strain Softening and Diagonally Crossing Shear Bands of Sand in Drained Triaxial Tests, 57

Effect of Structure on the Geotechnical Properties of Bauxite Residue, 792

Experimental Evaluation of Engineering Behavior of Soft Bangkok Clay under Elevated Temperature, 862

Failure and Dilatancy Properties of Sand at Relatively Low Stresses, 582

Limit-State Curve of Base-Course Material and Its Relevance for Resilient Modulus Testing, 795

Liquefaction Resistance of Undisturbed and Reconstituted Samples of a Natural Coarse Sand from Undrained Cyclic Triaxial Tests, 797

Monotonic and Cyclic Behavior of Two Calcareous Soils of Different Origins, 925

Shear Strength and Pore-Water Pressure Characteristics during Constant Water Content Triaxial Tests, 815

### Trickle irrigation

Comparison of Crop Contamination by Microorganisms during Subsurface Drip and Furrow Irrigation, 725

Real Local Losses Estimation for On-Line Emitters Using Empirical and Numerical Procedures, 1224

Soil Hydraulic Properties Affecting Discharge Uniformity of Gravity-Fed Subsurface Drip Irrigation Systems, 1225

### Trickling filters

New Process Design Procedure for Dealing with Variable Trickling Filter Effluent Suspended Solids, 684

The Role of Bioflocculation on Suspended Solids and Particulate COD Removal in the Trickling Filter Process, 655

### Trihalomethanes

Lime-Soda Softening Process Modifications for Enhanced NOM Removal, 600

MS2 Inactivation by Chloride-Assisted Electrochemical Disinfection, 584

### Trip forecasting

Borrowing Residential Trip Generation Rates, 1674

### Trip frequencies

Borrowing Residential Trip Generation Rates, 1674

### Tropical soils

Design of Compacted Lateritic Soil Liners and Covers, 798

Influence of Compactive Efforts on Lime-Slag Treated Tropical Black Clay, 1280

### Trucks

Comparative Study of Fatigue Provisions for the AASHTO Fatigue Guide Specifications and LRFR Manual for Evaluation, 169

Effect of Heavy Multiple Axle Trucks on Flexible Pavement Damage using In-Service Pavement Performance Data, 1747

Effect of Vehicle Velocity on the Dynamic Amplification of a Vehicle Crossing a Simply Supported Bridge, 128

Effect of Vehicle Velocity on the Dynamic Amplification of Two Vehicles Crossing a Simply Supported Bridge, 129

Fatigue Damage of Steel Bridges Due to Dynamic Vehicle Loads, 135

Full-Scale Field Tests on Flexible Pipes under Live Load Application, 1366

Measurement of Truck Axle Weights by Instrumenting Longitudinal Ribs of Orthotropic Bridge, 155

Modeling of Pavement Response using Nonlinear Cross-Anisotropy Approach, 1711

Safety Impacts of Differential Speed Limits for Trucks and Passenger Cars on Rural Interstate Highways: A Modified Empirical Bayes Approach, 1665

Truck Models for Improved Fatigue Life Predictions of Steel Bridges, 111

### Trusses

Behavior of Complex Hat Shapes used as Truss Chord Members, 1501

Continuum Modeling of an Innovative Space-Based Radar Antenna Truss, 79

Experimental Study of Offset HSS Connections, 1511

Finite-Element Modeling of Timber Joints with Punched Metal Plate Fasteners, 1479

Full-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1500

Modifying Merchants Bridge, 2022

Multiple Optimum Size/Shape/Topology Designs for Skeletal Structures using a Genetic Algorithm, 1552

Nonlinear Analytical Solution for Cable Truss, 446

Small-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1499

Strut-and-Tie Design Methodology for Three-Dimensional Reinforced Concrete Structures, 1531

### Tsunamis

Case Study: Mapping Tsunami Hazards Associated with Debris Flow into a Reservoir, 931

Lessons from Katrina, 2009

Maximum Fluid Forces in the Tsunami Runup Zone, 1903

### Tube joints

Reversed-Cyclic Behavior of a Novel Heavy Timber Tube Connection, 1568

### Tubes

Composite T-Beams using Reduced-Scale Rectangular FRP Tubes and Concrete Slabs, 205

Flexural Load Testing of Concrete-Filled FRP Tubes with Longitudinal Steel and FRP Rebar, 204

**Tubes**

- Investigation of the Influence of Sprinkler Fins and Dissolved Air on Jet Flow, 1168  
Modeling of Prestressed Concrete-Filled Circular Composite Tubes Subjected to Bending and Axial Loads, 1483  
Seismic Behavior of High-Strength Concrete Columns Confined by Fiber-Reinforced Polymer Tubes, 243  
Seismic Performance of Concrete-Filled FRP Tube Columns for Bridge Substructure, 139  
Splicing of Precast Concrete-Filled FRP Tubes, 224

**Tunneling**

- Bayesian Updating Application into Simulation in the North Edmonton Sanitary Trunk Tunnel Project, 376

**Tunnels**

- Battery-Joralemon Street Tunnel, 1374  
Combined Finite- and Boundary-Element Analysis of the Effects of Tunneling on Single Piles, 49  
Impact of Tunnel Reconstruction on Stream Water Quality in Great Smoky Mountains Natl. Park, 1129  
Material Spatial Variability and Slope Stability for Weak Rock Masses, 796  
Safety Assessment of Concrete Tunnel Linings under Fire Load, 1534

**Turbines**

- Pressure Drop as a Criterion of a Steam-Turbine Plant's Efficiency, 423

**Turbulence**

- Application of UVP within Porous Beds, 1028  
Evaluation of Mixing Energy in Laboratory Flasks used for Dispersant Effectiveness Testing, 593  
Mean Flow and Turbulence Structure in Vertical Slot Fishways, 1007  
Modeling Response of Flexible High-Aspect-Ratio Wings to Wind Turbulence, 70  
Numerical Calculation of Turbulence Structure in Depth-Varying Unsteady Open-Channel Flows, 999  
Particle Image Velocity Measurements of Undular and Hydraulic Jumps, 160  
Real Local Losses Estimation for On-Line Emitters Using Empirical and Numerical Procedures, 1224  
Similitude of Large-Scale Turbulence in Experiments on Local Scour at Cylinders, 934  
VOF Model for Simulation of a Free Overfall in Trapezoidal Channels, 1212

**Turbulent flow**

- Hydrodynamic Behavior of Asymmetric Oscillatory Boundary Layers at Low Reynolds Numbers, 1040  
Large-Eddy Simulation of High Reynolds Number Turbulent Flow Past a Square Cylinder, 468  
Large-Eddy Simulation of Turbulent Flow over a Fixed Two-Dimensional Dune, 996  
Multiple Tandem Jets in Cross-Flow, 1027  
Parallel Multigrid Detached Eddy Simulation Algorithm for Three-Dimensional Unsteady Incompressible Flows on Unstructured Meshes, 82  
Sediment Transport over Ripples in Oscillatory Flow, 950  
Three-Dimensional CFD Predictions and Experimental Comparison of Pressure Drop of Some Common Pipe Fittings in Turbulent Flow, 426  
Turbulence Dissipation in Stirred Jars, 567  
Turbulent Flow Friction Factor Calculation using a Mathematically Exact Alternative to the Colebrook — White Equation, 1017

**2006 ASCE TRANSACTIONS****Turkey**

- Artificial Neural Network Models of Daily Pan Evaporation, 1077  
Long-Range Geoid Testing by GPS-Leveling Data in Turkey, 1643  
Seismic Performance of Industrial Facilities Affected by the 1999 Turkey Earthquake, 1367  
Study of Turkish Bridge Standards Involving a Reinforced Concrete Arch Bridge, 1393

**Two phase flow**

- Development of Air Concentration on Chute Spillways, 1023

- Investigation of the Influence of Sprinkler Fins and Dissolved Air on Jet Flow, 1168

- Numerical and Experimental Study on Ship Wash Including Wave-Breaking on Shore, 1889

**Two-dimensional analysis**

- Evaluation of Dispersion Coefficients in Meandering Channels from Transient Tracer Tests, 1033

**Two-dimensional models**

- 2D Shallow-Water Model using Unstructured Finite-Volumes Methods, 958

- Case Study: Numerical Simulations of Debris Flow below Stožec, Slovenia, 943

- Efficient Solution of the Coupled One-Dimensional Surface — Two-Dimensional Subsurface Flow during Furrow Irrigation Advance, 1206

- Full Two-Dimensional Model for Rolling Resistance: Hard Cylinder on Viscoelastic Foundation of Finite Thickness, 565

- Limitations of Depth-Averaged Modeling for Shallow Wakes, 1004

- Numerical Simulation of Depleted Uranium Transport in a Desert Environment using a Distributed Parameter Watershed Model, 1960

- Strength of Two-Dimensional Nodal Zones in Strut — Tie Models, 1613

**Typhoons**

- Bridge Blockage and Overbank Flow Simulations using HEC-RAS in the Keelung River during the 2001 Nari Typhoon, 963

- Quantitative Estimation of Reservoir Sedimentation from Three Typhoon Events, 1109

**Ultimate strength**

- Energy Capacity Criterion for the Design of Columns against Collapse, 493

- Pinned Connection Strength and Behavior, 1456

- Response Prediction of RC Beams Externally Bonded with Steel-Reinforced Polymers, 207

**Ultrasonic methods**

- Bat Echolocation Interfering with Ultrasonic Sensors, 1069

- Iron-Mediated Aeration: Evaluation of Energy-Assisted Enhancement for In Situ Subsurface Remediation, 683

- Simultaneous and Sequential Photosonolysis of TCE and PCE, 586

**Ultraviolet radiation**

- Comparative Inactivation of *Bacillus Subtilis* Spores and MS-2 Coliphage in a UV Reactor: Implications for Validation, 760

- Impact of Particle Aggregated Microbes on UV Disinfection. I: Evaluation of Spore — Clay Aggregates and Suspended Spores, 666

## SUBJECT INDEX

## United Kingdom

- Impact of Particle Aggregated Microbes on UV Disinfection. II: Proper Absorbance Measurement for UV Fluence, 667
- Iron-Mediated Aeration: Evaluation of Energy-Assisted Enhancement for In Situ Subsurface Remediation, 683
- Polychromatic UV Fluence Measurement using Chemical Actinometry, Biodosimetry, and Mathematical Techniques, 693
- Simultaneous and Sequential Photosonolysis of TCE and PCE, 586
- Uncertainty principles**
- Accuracy of Annual Volume from Current-Meter-Based Stage Discharges, 1121
- Adaptive Optimization and Systematic Probing of Infrastructure System Maintenance Policies under Model Uncertainty, 1156
- Determination of Atterberg Limits: Uncertainty and Implications, 816
- Determination of Sustainable Yield in Urban Groundwater Systems: Beijing, China, 1072
- Equivalent Linearization for the Nonstationary Response Analysis of Nonlinear Systems with Random Parameters, 481
- Evaluation of Drinking Water Treatment Technology: An Entropy-Based Fuzzy Application, 728
- Fourway: Graphical Tool for Performance-Based Earthquake Engineering, 1564
- Infrastructure Development and Expansion under Uncertainty: A Risk-Preference-Based Lattice Approach, 350
- Modeling Uncertainty in an Object-Oriented Reservoir Operations Model, 1176
- Natural Frequencies of a Structure with Bounded Uncertainty, 578
- Operating Reservoirs in Changing Conditions, 2078
- Optimal Design in the Presence of Modeling Uncertainties, 77
- Probabilistic Service Life Assessment and Maintenance Planning of Concrete Structures, 1521
- Sensor Placement in Water Networks: A Stochastic Programming Approach, 1820
- Spatial Uncertainty Modeling of Climate Processes for Extreme Hydrogeomorphological Events Hazard Monitoring, 758
- Statistical Characterization of Fiber-Reinforced Polymer Composite Material Properties for Structural Design, 1569
- Uncertainty Analysis of Conventional Water Treatment Plant Design for Suspended Solids Removal, 744
- Uncertainty Analysis of Mound Monitoring for Recharged Water from Surface Spreading Basins, 762
- Undergraduate study**
- Classroom Assessment and Redesign of an Undergraduate Steel Design Course: A Case Study, 1433
- Innovative Final-Year Undergraduate Design Project Course using an International Project, 1432
- Underground construction**
- Integration of Construction As-Built Data via Laser Scanning with Geotechnical Monitoring of Urban Excavation, 410
- Legal Consequences of Damages to Underground Facilities by Horizontal Directional Drilling, 1437
- Shotcrete for Underground Support X, 2086
- Underground Construction and Ground Movement, 2095
- Underground storage**
- Design Factors Affecting the Flow of Water through Below-Ground Concrete Vaults, 737
- Vapor Leak Detection for an Underground Storage Tank System, 703
- Underground structures**
- A Good Move, 2037
- Safe Distance between Large-Diameter Rock Pipe Bursting and Nearby Buildings and Buried Structures, 1699
- Three-Dimensional Linear and Simplified Nonlinear Soil Response Methods Based on an Input Wave Field, 46
- Undertow**
- Modeling Near-Shore Waves, Surface Rollers, and Undertow Velocity Profiles, 1896
- Transformation, Attenuation, Setup, and Undertow of Internal Waves on a Gentle Slope, 1901
- Underwater pipelines**
- Considerations for Storm-Water Outfalls off Exposed Coasts, 1233
- Critical Flotation Density of Pipelines in Soils Liquefied by Waves and Density of Liquefied Soils, 1879
- Liquefaction around Pipelines under Waves, 1880
- Underwater structures**
- Case Study: Application of GPR to Detection of Hidden Dangers to Underwater Hydraulic Structures, 932
- Membrane Analysis and Minimum Weight Design of Submerged Spherical Domes, 1463
- Uniform flow**
- Hydraulic Elements Chart for Pipe Flow using New Definition of Hydraulic Radius, 1030
- Improving Fluid Flow in Clarifiers using a Highly Porous Media, 726
- Method of Fundamental Solutions for Three-Dimensional Stokes Flow in Exterior Field, 467
- Soil Hydraulic Properties Affecting Discharge Uniformity of Gravity-Fed Subsurface Drip Irrigation Systems, 1225
- United Arab Emirates**
- Hydrodynamic Characterization and Modeling of the Arabian Gulf, 1859
- United Kingdom**
- Effect of Structure on the Geotechnical Properties of Bauxite Residue, 792
- A Healing Place, 1998
- "Is That Not Horrific?" — or "You Have Been Warned!" *Burchell v. Bullard* and Implications for English Construction Law, 1428
- Legal Issues Associated with Emergent Actor Roles in Innovative U.K. Procurement: Prime Contracting Cast Study, 1413
- Novel Cellular Automata Approach to Optimal Water Distribution Network Design, 250
- Progress of Statutory Adjudication as a Means of Resolving Disputes in Construction in the United Kingdom, 1426
- Safety Hazard Identification on Construction Projects, 308

## United Kingdom

Security of Payment Legislation — Case of a Blunt but Practical and Equitable Instrument, 1427

### United States

Development of the Vertical Lift Bridge: Squire Whipple to J. A. L. Waddell, 1872-1917, 168

Frequency Distributions of Heavy Snowfall from Snowstorms in the United States, 1114

Inventive Maintenance, 2017

Life-Cycle Assessment of Office Buildings in Europe and the United States, 1138

Monitoring Snow-Cover Depletion by Coupling Satellite Imagery with a Distributed Snowmelt Model, 1808

Paving America From Coast to Coast, 2016

Probabilistic Behavior of Floods of Record in the United States, 1120

### Universities

Creating a New School of Computer Science and Engineering in Kansas City, 1912

### Unpaved roads

Evaluation of Dust Pesticides for Unpaved Roads in Arid Climates, 1394

### Unsaturated flow

Case History of Geosynthetic Reinforced Segmental Retaining Wall Failure, 921

Sediment Transport Model for Seepage Erosion of Stream Bank Sediment, 1133

### Unsaturated soils

Advances in Unsaturated Soil, Seepage, and Environmental Geotechnics, 2046

Analysis of Deep Moisture Barriers in Expansive Soils. I: Constitutive Model Formulation, 43

Behavior of Unsaturated Layered Soil Columns during Infiltration, 1105

Contaminant Transport Model for Unsaturated Soil using Fuzzy Approach, 752

Frequency-Dependent Amplification of Unsaturated Surface Soil Layer, 827

General Validity of Conductivity Means in Unsaturated Flow Models, 1125

Hysteresis of Matrix Suction and Capillary Stress in Monodisperse Disk-Shaped Particles, 490

Improved Compartmental Modeling and Application to Three-Phase Contaminant Transport in Unsaturated Porous Media, 606

Plane Strain and Axially Symmetric Consolidation in Unsaturated Soils, 24

Prediction of Soil-Water Characteristic Curve using Genetic Programming, 840

Soil-Water Characteristic Curves of Stabilized Expansive Soils, 846

Suction Stress Characteristic Curve for Unsaturated Soil, 791

Unsaturated Soil Mechanics in Engineering Practice, 807

Unsaturated Soils 2006, 2096

### Unsteady flow

Bridge Blockage and Overbank Flow Simulations using HEC-RAS in the Keelung River during the 2001 Nari Typhoon, 963

Flow Depletion of Semipervious Streams Due to Unsteady Pumping Discharge, 1209

## 2006 ASCE TRANSACTIONS

Flow Resistance and Momentum Flux in Compound Open Channels, 1059

Numerical Error in Weighting Function-Based Unsteady Friction Models for Pipe Transients, 1001

Parallel Multigrid Detached Eddy Simulation Algorithm for Three-Dimensional Unsteady Incompressible Flows on Unstructured Meshes, 82

Systematic Evaluation of One-Dimensional Unsteady Friction Models in Simple Pipelines, 1000

Time-Line Interpolation Errors in Pipe Networks, 961

### Uplift

Physically Based Model for Evaluation of Rock Scour due to High-Velocity Jet Impact, 5

### Uranium

Citric Acid Enhanced Remediation of Soils Contaminated with Uranium by Soil Flushing and Soil Washing, 609

Numerical Simulation of Depleted Uranium Transport in a Desert Environment using a Distributed Parameter Watershed Model, 1960

### Urban areas

Blast-Resistant Glazing Design, 97

BMP Technology in Urban Watersheds: Current and Future Directions, 2052

Case Study of Factors Affecting Urban Residential Construction in St. Louis, 1786

CBD Oriented Commuters' Mode and Residential Location Choices in an Urban Area with Surface Streets and Rail Transit Lines, 1799

Combined Hydraulic and Black-Box Models for Flood Forecasting in Urban Drainage Systems, 1131

Computational Fluid Dynamics Simulation of Concentration Distributions from a Point Source in the Urban Street Canyons, 67

Determination of Sustainable Yield in Urban Groundwater Systems: Beijing, China, 1072

Development of a Methodology to Predict Through-Trip Rates for Small Communities, 1784

Development of a Simple Phosphorus Model for a Large Urban Watershed: A Case Study, 642

Downstream Economic Benefits of Conservation Development, 1804

Great Works on Urban Water Resources (1962-2001), 2071

Handling of Urban Snow with Regard to Snow Quality, 612

Impacts of the 2001 World Trade Center Attack on New York City Critical Infrastructures, 1163

Integrated Management of Irrigation and Urban Storm-Water Infiltration, 1839

Investigation of Boundary Shear Stress and Pollutant Detachment from Impervious Surface during Simulated Urban Storm Runoff, 592

Managing Rock Blasting Work in Urban Environments, 1978

Market Disequilibrium and Urban Land Shortages: Analysis of Policy and Patterns in Hong Kong, 1780

Opportunity Costs of Residential Best Management Practices for Stormwater Runoff Control, 1810

Optimal Layout of Sewer Systems: A Deterministic versus a Stochastic Model, 1018

Overtaking Rule Method for the Cleaning of Matched License-Plate Data, 1730

Peak Discharge Estimation using Analytical Probabilistic and Design Storm Approaches, 1075

## SUBJECT INDEX

- Predicting Speeds in an Urban Right-Turn Lane, 1684  
Route Selection for a New Transportation System in Hillside Urban Areas: A Case Study in Nagasaki, Japan, 1781  
Runoff Quality Analysis of Urban Catchments with Analytical Probabilistic Models, 1801  
Satellite Monitoring of Urban Spatial Growth in the Amman Area, Jordan, 1796  
Standard Guidelines for the Design of Urban Stormwater Systems ASCE/EWRI 45-05; Standard Guidelines for Installation of Urban Stormwater Systems ASCE/EWRI 46-05; Standard Guidelines for the Operation and Maintenance of Urban Stormwater Systems ASCE/EWRI 47-05, 2089  
Standard Guidelines for the Design of Urban Subsurface Drainage (ASCE/EWRI 12-05); Standard Guidelines for the Installation of Urban Subsurface Drainage (ASCE/EWRI 13-05); and Standard Guidelines for the Operation and Maintenance of Urban Subsurface Drainage (ASCE/EWRI 14-05), 2090  
Updating Rainfall IDF Relationships to Maintain Urban Drainage Design Standards, 1123  
Urban Bicycle Route Safety Rating Model Application in Jersey City, New Jersey, 1716  
Utilization of Trenchless Construction Methods in Mainland China to Sustain Urban Infrastructure, 1984  
**Urban development**  
Analyzing the Impacts of Microscale Urban Attributes on Travel: Evidence from Suburban Adelaide, Australia, 1787  
Completing the Circle, 2023  
Multiobjective Strategic Evaluation for Urban Development in Kaohsiung, Taiwan: Case Study, 1791  
Shifts in Activity Centers along the Corridor of the Blue Subway Line in Taipei, 1773  
Urban Runoff Quality Characterization and Load Estimation in Saskatoon, Canada, 750  
**Urban planning**  
Customizing Visualization in Three-Dimensional Urban GIS via Web-Based Interaction, 1782  
Discrete Choice Model for Defining a Parking-Fee Policy on Island of Ortigia, Siracusa, 1789  
Evaluating the Effectiveness of State Department of Transportation Investment Decisions: Linking Performance Measures to Resource Allocation, 1159  
Modeling Network Traffic for Planning Applications in a Small Community, 1790  
Supply Chain Simulation Modeling for the Manufactured Housing Industry, 1797  
Temporal Variation in Consumer Spatial Behavior in Shopping Streets, 1792  
Urban Origins/Destinations from High-Resolution Remote Sensing Images, 1783  
**Urban transportation**  
Determining the Desired Amount of Parking using Game Theory, 1778  
Developing Integrated Schedules for Urban Rail and Feeder Bus Operation, 1788  
Transportation Activity Centers for Urban Transportation Analysis, 1800  
**Urbanization**  
Quantifying Long-Term NPS Pollutant Flux in an Urbanizing Watershed, 643

## Vegetation

- Watershed-Scale Impacts of Forest Buffers on Water Quality and Runoff in Urbanizing Environment, 1815  
**Utah**  
Impact of Politics on the Colorado River Basin Water Agreement: In-Depth Administrative Analysis, 1911  
Streaming Solutions, 1997  
**Utilities**  
Assessing the Financial Feasibility of Utility-Provided Backup Power during Project Site Planning, 419  
Intelligent Utility Locating Tool for Excavators, 379  
**Vadose zone**  
Development of a Field Design for In Situ Gaseous Treatment of Sediment Based on Laboratory Column Test Data, 769  
Improved Compartmental Modeling and Application to Three-Phase Contaminant Transport in Unsaturated Porous Media, 606  
**Validation**  
Comparison of Two Model Concepts for Simulation of Nitrogen Removal at a Full-Scale Biological Nutrient Removal Pilot Plant, 636  
DSC Model for Soil and Interface Including Liquefaction and Prediction of Centrifuge Test, 799  
Granular Material Silos under Dynamic Excitation: Numerical Simulation and Experimental Validation, 1594  
Homogenization Approach for the Limit Analysis of Out-of-Plane Loaded Masonry Walls, 1602  
Loading of a Gavel-Buried Steel Pipe Subjected to Rockfall, 913  
Model to Predict Pavement Temperature Profile: Development and Validation, 1679  
Performance Evaluation of Reference Evapotranspiration Equations across a Range of Indian Climates, 1190  
Statistical Considerations for Predicting Residual Value of Heavy Equipment, 359  
Validation of a Three-Dimensional Computational Fluid Dynamics Model of a Contact Tank, 1005  
Validation of Finite-Element Analyses for Storm Shelters, 89  
Viscoelastic Modeling and Field Validation of Flexible Pavements, 452  
**Value engineering**  
Characteristics for Leveraging Value Management Processes on Capital Facility Projects, 1253  
Public Clients' Best Value Perspectives of Public Private Partnerships in Infrastructure Development, 298  
**Valves**  
Innovative Energy-Dissipating Hood, 1006  
**Vector analysis**  
Case Study of Precision of GPS Differential Correction Strategies: Influence on aDcp Velocity and Discharge Estimates, 955  
Joint First-Passage Probability and Reliability of Systems under Stochastic Excitation, 441  
**Vegetation**  
Effect of Controlled Drainage and Vegetative Buffers on Drainage Water Quality from Wastewater Irrigated Fields, 1182  
Effectiveness of Bermuda Grass as Vegetative Cover in Grassed Waterway: A Simulated Study, 1196

## Vegetation

## 2006 ASCE TRANSACTIONS

- Functional Relationships of Resistance in Wide Flood Plains with Rigid Unsubmerged Vegetation, 948  
Fuzzy Geographic Information Systems for Phytoremediation Plant Selection, 596  
Lodging Velocity for an Emergent Aquatic Plant in Open Channels, 1032  
Storm Water Detention Ponds: Modeling Heavy Metal Removal by Plant Species and Sediments, 717
- Vehicle impacts**  
Security Barrier Design, 1981
- Vehicles**  
Approximate Analysis of Bridges for the Routing and Permitting Procedures of Overweight Vehicles, 132  
Assessment of the Impact of Improvement Measures on Air Quality: Case Study of Delhi, 1714  
Crashworthiness of Motor Vehicle and Traffic Light Pole in Frontal Collisions, 1743  
Economic Heuristic Optimization for Heterogeneous Fleet VRPHESTW, 1694  
Experimental Evaluation of Dynamic Effects for a Selected Highway Bridge, 1391  
Fully Nonhydrostatic Modeling of Surface Waves, 479  
Innovative Bridge Condition Assessment from Dynamic Response of a Passing Vehicle, 579  
Multivariate Simulation and Multimodal Dependence Modeling of Vehicle Axle Weights with Copulas, 1767  
New Methodology: Permit Checking of Vehicular Overloads, 131  
Overtaking Rule Method for the Cleaning of Matched License-Plate Data, 1730  
Safety Impacts of Differential Speed Limits for Trucks and Passenger Cars on Rural Interstate Highways: A Modified Empirical Bayes Approach, 1665  
Sensitivity of Live Load Distribution Factors to Vehicle Spacing, 117  
Simplified Methodology to Estimate Emissions from Mobile Sources for Ambient Air Quality Assessment, 1753  
Stochastic Spatial Excitation Induced by a Distributed Contact on Homogenous Gaussian Random Fields, 505  
Technology Evaluation of Hydrogen Light-Duty Vehicles, 663  
Vehicle Collision with Bridge Piers, 1  
Vehicle Condition Surveillance on Continuous Bridges Based on Response Sensitivity, 442  
Vehicle-Induced Dynamic Performance of FRP versus Concrete Slab Bridge, 144
- Velocity**  
Blast and Construction Vibration Monitoring and Control: Thirty-Five-Year Perspective, 1971  
Burial of Short Cylinders Induced by Scour under Combined Waves and Currents, 1897  
Control of Suspension Bridge Nonlinear Vibrations due to Moving Loads, 500  
Decreasing Measuring Errors of a Thermal Groundwater Flowmeter, 1195  
Effect of Vehicle Velocity on the Dynamic Amplification of a Vehicle Crossing a Simply Supported Bridge, 128  
Effect of Vehicle Velocity on the Dynamic Amplification of Two Vehicles Crossing a Simply Supported Bridge, 129
- Effects of Velocity Gradients and Secondary Flow on the Dispersion of Solutes in a Meandering Channel, 1061  
Electromagnetic Wave Surface Velocimetry, 946  
Entrainment Properties of Plane Surface-Jets in Shallow Current, 967  
Errors in the Bed Shear Stress as Estimated from Vertical Velocity Profile, 1220  
Evaluation of Mixing Energy in Laboratory Flasks used for Dispersant Effectiveness Testing, 593  
Fuzzy Analysis of Slope-Area Discharge Estimates, 1171  
Generic Design of V-Shape and Vane-Type Breakwaters to Reduce Green Water Load Effects on Deck Structures and Containers of Ships: Case Study, 1860  
Growth and Decay of Estuary Ice Cover, 184  
Hydraulic Elements Chart for Pipe Flow using New Definition of Hydraulic Radius, 1030  
Influence of Nonplastic Fines on Shear Wave Velocity-Based Assessment of Liquefaction, 878  
Influence of Pore-Water Velocity on Transport Behavior of Cadmium: Equilibrium versus Nonequilibrium, 1958  
Laboratory Measurements of Bed Load Sediment Transport Dynamics, 1875  
Method of Fundamental Solutions for Three-Dimensional Stokes Flow in Exterior Field, 467  
Natural Gradient Tracer Test for a Permeable Reactive Barrier in Denmark. II: Spatial Moments Analysis and Dispersion of Conservative Tracer, 1967  
New Method for Estimation of Discharge, 1035  
Normal Transmission of S-Wave across Parallel Fractures with Coulomb Slip Behavior, 498  
Numerical Simulation of Solitary Waves using Velocity-Vorticity Formulation of Navier-Stokes Equations, 456  
Particle Image Velocity Measurements of Undular and Hydraulic Jumps, 1060  
Rate of Deposition of Fine Sediment from Suspension, 985  
Recent Progress in the Modeling of Corrosion of Structural Steel Immersed in Seawaters, 1152  
Response Amplitude and Hydrodynamic Force for a Buoy over a Convex, 1864  
Seismic Response of a Composite Landfill Cover, 819  
Time-Delayed Positive Velocity Feedback Control Design for Active Control of Structures, 503  
Turbulent Boundary Layer Flows above a Porous Surface Subject to Flow Injection, 553
- Velocity profile**  
Historic Discharge Measurements in Three Rhine Branches, 945  
Multilayer Averaged and Moment Equations for One-Dimensional Open-Channel Flows, 1013
- Ventilation**  
Dynamics of Air Flow in Sewer Conduit Headspace, 1009  
Mechanics and Test Study of Two-Dimensional Flexible Membranes, 92  
Modeling Ventilation Phenomenon in Sanitary Sewer Systems: A System Theoretic Approach, 1008
- Verification**  
Experimental Verification of Smart Cable Damping, 462

## SUBJECT INDEX

- Geographic Information Systems/National Elevation Data Route Mileage Verification, 1646  
Long-Range Geoid Testing by GPS-Leveling Data in Turkey, 1643  
**Vertical loads**  
Displacements and Stresses Due to a Uniform Vertical Circular Load in an Inhomogeneous Cross-Anisotropic Half-Space, 12  
Undrained Bearing Capacity of Square and Rectangular Footings, 27  
**Vibration**  
Analysis and Solution to Human-Induced Lateral Vibrations on a Historic Footbridge, 104  
Analysis of Long Span Bridge Response to Winds: Building Nexus between Flutter and Buffeting, 1637  
Auto-Parametric Vibration of a Cable-Stayed-Beam Structure under Random Excitation, 463  
Blast and Construction Vibration Monitoring and Control: Thirty-Five-Year Perspective, 1971  
Construction of Customized Mass-Stiffness Pairs using Templates, 80  
Control of Suspension Bridge Nonlinear Vibrations due to Moving Loads, 500  
Domain Decomposition Method for Calculating the Failure Probability of Linear Dynamic Systems Subjected to Gaussian Stochastic Loads, 482  
Dynamic Response of Closed-Loop System with Uncertain Parameters using Interval Finite-Element Method, 520  
Effect of Internal Moment Release on the Eigenfrequencies of Combined Linear Systems, 519  
Experimental Verification of Smart Cable Damping, 462  
Flexibility-Based Damage Localization from Stochastic Realization Results, 499  
Free Transverse and Lateral Vibration of Beams with Torsional Coupling, 59  
Full-Scale Measurements to Investigate Rain — Wind Induced Cable-Stay Vibration and its Mitigation, 133  
Fundamental Frequency Testing of Reinforced Concrete Beams, 1384  
General Approach for Training Back-Propagation Neural Networks in Vibration Control of Multidegree-of-Freedom Structures, 269  
Ground Motion Induced by Train Passage, 455  
History and Aesthetics of the Bronx-Whitestone Bridge, 127  
Hydraulic Damping of Saturated Poroelastic Soils During Steady-State Vibration, 523  
In-Service Evaluation of Cable-Stayed Bridges, Overview of Available Methods, and Findings, 175  
Integrated Optimization of Control System for Smart Cylindrical Shells using Modified GA, 66  
Investigation of Foundation Vibrations Resting on a Layered Soil System, 789  
Mechanical Grading of Round Timber Beams, 1261  
Minimizing Construction Vibration Effects, 11  
Mitigation of Soil Movements from Pile Driving, 1977  
Nine-Node Resultant-Stress Shell Element for Free Vibration and Large Deflection of Composite Laminates, 69  
Nondestructive Dynamic Evaluation of a Concrete Reaction Wall — Numerical and Experimental Studies, 1389

## Viscoplasticity

- Nonlinear Response of Double-Wall Cylindrical Shell Vibrations under Random Excitation, 63  
On the Free Vibrations of Variable-Arc-Length Beams: Analytical and Experimental, 1517  
Optimal Vibration Absorber with Nonlinear Viscous Power Law Damping and White Noise Excitation, 439  
Overview of Vibrational Structural Health Monitoring with Representative Case Studies, 174  
Pendulum Tuned Mass Dampers for Floor Vibration Control, 1371  
Probabilistic Critical Excitation Method for Earthquake Energy Input Rate, 538  
Reduction of Vibrations due to Foundation Slabs, 825  
Safe Distance between Large-Diameter Rock Pipe Bursting and Nearby Buildings and Buried Structures, 1699  
Selection of Physical and Geometrical Properties for the Confinement of Vibrations in Nonhomogeneous Beams, 72  
Simplified Model for Vertical Vibrations of Surface Foundations, 838  
Site-Specific Validation of Random Vibration Theory-Based Seismic Site Response Analysis, 863  
Stress Reduction Coefficient and Amplification Factor for Seismic Response of Ground, 26  
Thermoelastic Enhancement of Damping of Sand using Synthetic Ground Rubber, 824  
Three-Dimensional Free Vibration Analysis of Multi-phase Piezocomposite Structures, 524  
Vehicle Condition Surveillance on Continuous Bridges Based on Response Sensitivity, 442  
Vibration of Open Cylindrical Shells with Stepped Thickness Variations, 514  
Vibration Performance of a Large Cantilever Grandstand during an International Football Match, 1385  
Vibrational Tension Measurement of External Tendons in Segmental Posttensioned Bridges, 161  
Wavelet-Based Vibration Sensor Data Compression Technique for Civil Infrastructure Condition Monitoring, 275  
**Virginia**  
Anatomy of a Successful Partnering Program on a Megaproject, 1915  
Corridor Protection through NEPA, 1420  
Jackson River Modeling: 50-Year Perspective, 719  
**Viruses**  
MS2 Inactivation by Chloride-Assisted Electrochemical Disinfection, 584  
**Viscoelasticity**  
Behavior of One-Dimensional Consolidation under Time-Dependent Loading, 480  
Full Two-Dimensional Model for Rolling Resistance: Hard Cylinder on Viscoelastic Foundation of Finite Thickness, 565  
Moisture Effects on Elastic and Viscoelastic Properties of CFRP Rebars and Vinyl Ester Binder, 1340  
Rate-Type Model for Bituminous Mixtures and Its Application to Sand Asphalt, 497  
Viscoelastic Modeling and Field Validation of Flexible Pavements, 452  
**Viscoplasticity**  
Evaluation of Local Bending in Profile-Wall Polyethylene Pipes, 1762

**Viscosity**

- Confirmation of Aqueous Polymer Sorption on Contaminant Barrier Clay using TGA, 1293  
Effect of Penetration Rate on Penetrometer Resistance in Clay, 887  
Estimation of RAP's Binder Viscosity using GPC without Binder Recovery, 1324  
Evaluation of Viscosity Values for Mixing and Compaction Temperatures, 1322  
Lightweight Shotcrete Canoe: Use of Viscosity Modifying Admixture and Acetone as Artificial Paste, 1300

**Voids**

- Design and Performance of Stone Mastic Asphalt, 1768  
Shear Localization Due to Liquefaction-Induced Void Redistribution in a Layered Infinite Slope, 897

**Volatile organic chemicals**

- Catalytic Incineration of Acrylonitrile with Platinum Supported on  $\text{Al}_2\text{O}_3$ , 751  
Determination and Correlation of Binary Gas Adsorption Equilibria of VOCs, 616  
Electronic Nose — Membrane Interface Probe for Geoenvironmental Site Characterization, 882  
Removal of Toluene Vapor with Dispersed Activated Carbon, 622

**Volatilization**

- Nutrient Removal in a Cold-Region Wastewater Stabilization Pond: Importance of Ammonia Volatilization, 633  
PCB Volatilization from Sediments, 594

**Volume change**

- Evaluation of Distress in Supports of Hyperbolic Paraboloid Shell, 1364  
Predictive Model for the Water Retention Curve of Deformable Clayey Soils, 881  
Shear Strength and Pore-Water Pressure Characteristics during Constant Water Content Triaxial Tests, 815  
Study of Effects of Natural Pozzolan on Properties of Cement Mortars, 1356

- Volume Change Behaviors of Expansive Soils Stabilized with Recycled Ashes and Fibers, 1292

**Volume measurement**

- Accuracy of Annual Volume from Current-Meter-Based Stage Discharges, 1121

**Vortex shedding**

- Coupling of U-Tube and Shear Layer Oscillations in an Interconnected Flow Compartment, 511  
Large-Eddy Simulation of High Reynolds Number Turbulent Flow Past a Square Cylinder, 468  
Limitations of Depth-Averaged Modeling for Shallow Waves, 1004  
Lodging Velocity for an Emergent Aquatic Plant in Open Channels, 1032

**Vortices**

- Experimental Study of Flow in a Vortex Drop Shaft, 937

- Sediment Transport over Ripples in Oscillatory Flow, 950

**Walls**

- Bearing Strength of Slabs on Grade Supporting a Cold-Formed Steel Wall in Low-Rise Building, 87

**Braced for the Future, 2040**

- Buckling of Conventionally Sheathed Stud Walls, 1514  
Cellular Automata Model for Predicting the Failure Pattern of Laterally Loaded Masonry Wall Panels, 276

**Evaluation of Distress in Supports of Hyperbolic Paraboloid Shell, 1364**

- Experimental Capacity Assessment of Cold-Formed Boxed Stud and C Stud Wall Systems used in Australian Residential Construction, 1502

**Experimental Evaluation of Posttensioned Hybrid Coupled Wall Subassemblages, 1538**

- Experimental In-Plane Shear Strength Investigation of Reinforced Concrete Masonry Walls, 1478

**Exposure to Condensation Moisture of Sheathing in Retrofitted Leaky Wall Assemblies, 90**

- Flexural and Shear Strength of Composite Lintels in Glass-Fiber-Reinforced Gypsum Wall Constructions, 1306

**Glancing-Blow Impact Forces by a Barge Train on a Lock Approach Wall, 1150**

- Mechanics and Test Study of Two-Dimensional Flexible Membranes, 92

**Nondestructive Dynamic Evaluation of a Concrete Reaction Wall — Numerical and Experimental Studies, 1389**

- Parallel Walls as an Abutment Scour Countermeasure, 982

**Seismic Design and Analytical Modeling of Posttensioned Hybrid Coupled Wall Subassemblages, 1539**

- Structural Use of Glass, 98

**Warpage**

- Spatial Stability of Shear Deformable Nonsymmetric Thin-Walled Curved Beams: A Centroid-Shear Center Formulation, 573

**Washing**

- EDTA-Enhanced Washing for Remediation of Pb- and/or Zn-Contaminated Soils, 730

**Experimental Data and Theoretical Analysis of Particle Removal Efficiency in a Novel Hydraulic Separation Unit, 733****Washington**

- Case Study: Mapping Tsunami Hazards Associated with Debris Flow into a Reservoir, 931

- Design, Construction, and Installation of a Floating Caisson used as a Bridge Pier, 1869

**Past Perfect, 1996**

- Use of Satellite Data for Streamflow and Reservoir Storage Forecasts in the Snake River Basin, 1811

**Waste disposal**

- Design Factors Affecting the Flow of Water through Below-Ground Concrete Vaults, 737

**Detection of Illegal Dump Deposit with GPR: Case Study, 1955**

- Hydrological Evaluation of Septic Disposal Field Design in Sloping Terrains, 731

**Marine Wastewater Discharges from Multiport Diffusers. III: Stratified Stationary Water, 971**

- Marine Wastewater Discharges from Multiport Diffusers. IV: Stratified Flowing Water, 972

**Microstructure and Compactive Instabilities of a Stabilized Residue, 1290**

- Novel Hybrid Filter for the Treatment of Septic Tank Effluent, 685

## SUBJECT INDEX

Stabilization of Arsenic-Bearing Sludges using Lime, 1276

### Waste management

Application Framework for Mapping and Simulation of Waste Handling Processes in Construction, 408

Catalytic Incineration of Acrylonitrile with Platinum Supported on  $\text{Al}_2\text{O}_3$ , 751

Design Issues for Concrete Reinforced with Steel Fibers, Including Fibers Recovered from used Tires, 1339

Distribution Deviation of Large Aggregates from Uniformity in Waste Containment Concrete. I: Quantitative Model Formulation, 1268

Distribution Deviation of Large Aggregates from Uniformity in Waste Containment Concrete. II: Experimental Results and Quality Assurance, 1269

Economic Analysis of an Irrigation System for Liquid Manure Application, 1208

Estimate of Landfill Settlements due to Mechanical and Decompositional Processes, 837

Field Evaluation of a Leachate Collection System Constructed with Scrap Tires, 869

Metals Removal from Municipal Waste Incinerator Fly Ashes and Reuse of Treated Leachates, 654

Microstructure and Compactive Instabilities of a Stabilized Residue, 1290

Modeling Ventilation Phenomenon in Sanitary Sewer Systems: A System Theoretic Approach, 1008

Novel Hybrid Filter for the Treatment of Septic Tank Effluent, 685

Role of Particle Size and Ammonium Oxidation in Removal of  $17\alpha$ -Ethynodiol in Bioreactors, 757

Simple Rule-Based Algorithm for Optimizing Volatile Fatty Acids Production in Primary Sludge Fermentation Schemes, 747

Strength of Lightweight Glass Aggregate Concrete, 1343

Treatment of Contaminated Soils and Groundwater using ISCO, 1939

Unit Weight of Municipal Solid Waste, 893

Zero-Valent Iron Reactive Materials for Hazardous Waste and Inorganics Removal, 2097

### Waste sites

Installation of Horizontal Wells in Landfilled Waste using Directional Drilling, 859

Unit Weight of Municipal Solid Waste, 893

### Waste stabilization ponds

Aerated Rock Filters for Enhanced Ammonia and Fecal Coliform Removal from Facultative Pond Effluents, 646

Nutrient Removal in a Cold-Region Wastewater Stabilization Pond: Importance of Ammonia Volatilization, 633

### Waste storage

Design Factors Affecting the Flow of Water through Below-Ground Concrete Vaults, 737

Porosity Fluctuations in Desiccating Samples of Grout-Stabilized Soil, 1289

Stabilization of Arsenic-Bearing Sludges using Lime, 1276

### Waste treatment

Novel Hybrid Filter for the Treatment of Septic Tank Effluent, 685

## Wastewater management

Potential of a Combination of UASB and DHS Reactor as a Novel Sewage Treatment System for Developing Countries: Long-Term Evaluation, 601

Respirometric Assessment of Primary Sludge Fermentation Products, 590

### Wasteload allocation

Multiojective Optimal Waste Load Allocation Models for Rivers using Nondominated Sorting Genetic Algorithm-II, 1814

### Wastewater

Dam Break Wave of Thixotropic Fluid, 960

Dynamics of Air Flow in Sewer Conduit Headspace, 1009

Effect of Controlled Drainage and Vegetative Buffers on Drainage Water Quality from Wastewater Irrigated Fields, 1182

Marine Wastewater Discharges from Multiport Diffusers. III: Stratified Stationary Water, 971

Marine Wastewater Discharges from Multiport Diffusers. IV: Stratified Flowing Water, 972

Metallic Characterization of Foundry By-Products per Waste Streams and Leaching Protocols, 665

Quantitative Model of Coagulation with Inorganic Polymer Flocculant PACI: Application of the PCNM, 647

Sludge Blanket Height and Flow Pattern in UASB Reactors: Temperature Effects, 699

Stress-Controlled Filtration with Compressible Particles, 858

### Wastewater management

Activated Sludge Process Modification for Sludge Yield Reduction using Pulp and Paper Wastewater, 715

Aerobic Biofiltration Processes — Advances in Wastewater Treatment, 1969

Air/Water Oxygen Transfer in a Biological Aerated Filter, 603

Anaerobic Filter Treatment of Municipal Wastewater: Biosolids Behavior, 585

Biodegradation of Phenol with Wastewater as a Cosubstrate in Upflow Anaerobic Sludge Blanket, 759

Biotreatment of Surfactant Flush Wastewater from Wood Treatment Soil, 595

Combined Removal of Carbon and Nitrogen in an Integrated UASB-Jet Loop Reactor Bioreactor System, 669

Contrasting the Benefits of Primary Clarification versus Prefermentation in Activated Sludge Biological Nutrient Removal Systems, 720

Electrochemical Oxidation and Ozonation for Textile Wastewater Reuse, 619

Electrocoagulation of Silica Nanoparticles in Wafer Polishing Wastewater by a Multichannel Flow Reactor: A Kinetic Study, 772

Electrolytic Treatment of Azo Dye Wastewaters: Impact of Matrix Chloride Content, 656

Enhancing Bioremediation with Enzymatic Processes: A Review, 1947

Estimating Transition Probabilities in Markov Chain-Based Deterioration Models for Management of Wastewater Systems, 1802

Evaluation of Water Reuse Technologies for the Textile Industry, 618

Feasibility of Using Natural Zeolites to Remove Sodium from Coal Bed Methane-Produced Water, 771

- Fenton and Electro-Fenton Methods for Oxidation of H-Acid and Reactive Black 5, 624
- Formation of Aerobic Granules with Domestic Sewage, 677
- Industrial Water Use Kuznets Curve: Evidence from Industrialized Countries and Implications for Developing Countries, 1819
- Integration of Processes to Treat Wastewater and Source-Separated Urine, 620
- Methodological Aspects of using Blast Furnace Slag for Wastewater Phosphorus Removal, 746
- Modeling Water Movement and Flux from Membrane Permeation Systems for Wastewater Microirrigation, 714
- Nitrogen Transformations during Soil-Aquifer Treatment of Wastewater Effluent — Oxygen Effects in Field Studies, 732
- Nutrient Removal in a Cold-Region Wastewater Stabilization Pond: Importance of Ammonia Volatilization, 633
- Organic Hazardous Substances in Graywater from Swedish Households, 700
- Procedure to Quantify Biofilm Activity on Carriers used in Wastewater Treatment Systems, 745
- Simulating Activated Sludge System by Simple-to-Advanced Models, 587
- Simultaneous Removal of Carbon and Nitrogen from Swine Wastewater using an Immobilized-Cell Reactor, 630
- Statistical Modeling to Forecast Odor Levels of Biosolids Applied to Reuse Sites, 652
- Treatment of Dilute Wastewaters using a Novel Submerged Anaerobic Membrane Bioreactor, 604
- Treatment of High-Strength Pharmaceutical Wastewater and Removal of Antibiotics in Anaerobic and Aerobic Biological Treatment Processes, 597
- Treatment of Polishing Wastewater from Semiconductor Manufacturer by Dispersed Air Flotation, 588
- Type II Settling Data Analysis, 598
- Use of Boron as a Tracer for Recycled Water in Brackish Aquifers, 696
- Wastewater Treatment with Biomass Attached to Porous Geotextile Baffles, 614
- Wastewater treatment**
- Anaerobic Degradability: Effect of Particulate COD, 637
- Hydrological Evaluation of Septic Disposal Field Design in Sloping Terrains, 731
- The Role of Bioflocculation on Suspended Solids and Particulate COD Removal in the Trickling Filter Process, 655
- Water**
- Case Study: Design and Operation of Sustainable Urban Infiltration Ponds Treating Storm Runoff, 1775
- Influence of Water on Alkali-Silica Reaction: Experimental Study and Numerical Simulations, 1328
- Water balance**
- Integrated Management of Irrigation and Urban Storm-Water Infiltration, 1839
- Water circulation**
- 3D Model Application to Study Residual Flow in the Arabian Gulf, 1891
- Water content**
- BCD: A Soil Modulus Device for Compaction Control, 788
- Behavior of Unsaturated Layered Soil Columns during Infiltration, 1105
- Comparison in Undrained Shear Strength between Undisturbed and Remolded Ariake Clays, 806
- Design of Compacted Lateritic Soil Liners and Covers, 798
- Exposure to Condensation Moisture of Sheathing in Retrofitted Leaky Wall Assemblies, 90
- Laboratory Evaluation of Smear Zone and Correlation between Permeability and Moisture Content, 867
- Shear Strength and Pore-Water Pressure Characteristics during Constant Water Content Triaxial Tests, 815
- Sudden Failure of a Heavily Loaded Container Pavement, 912
- Water demand**
- Can Reservoir Storage Be Uneconomically Large?, 1854
- Ecofriendly Concrete with High Volume of Lagoon Ash, 1310
- Water depth**
- Wave Interaction with a Flexible Porous Breakwater in a Two-Layer Fluid, 540
- Water discharge**
- Accuracy of Annual Volume from Current-Meter-Based Stage Discharges, 1121
- Derived Operating Rules for Allocating Recharges and Withdrawals among Unconnected Aquifers, 1803
- Evaluation of the Micromodel: An Extremely Small-Scale Movable Bed Model, 965
- Performance of Slit Weir, 1029
- Stage-Discharge Relations for Low-Gradient Tidal Streams using Data-Driven Models, 979
- Water distribution systems**
- Adjusting Nodal Demands in SCADA Constrained Real-Time Water Distribution Network Models, 942
- Alternative Decision Making in Water Distribution Network with NSGA-II, 1813
- Assessing Performance under Regulatory Evolution: A European Transit System Perspective, 1798
- Bayesian Belief Networks to Integrate Monitoring Evidence of Water Distribution System Contamination, 1825
- Condition Assessment of Water Distribution Pipes, 1151
- Condition Rating Model for Underground Infrastructure Sustainable Water Mains, 1376
- Consequence Management Optimization for Contaminant Detection and Isolation, 1829
- Contaminant Warning in Water Networks: General Mixed-Integer Linear Models for Sensor Location Design, 1824
- Contamination Source Identification in Water Systems: A Hybrid Model Trees-Linear Programming Scheme, 1828
- Distribution System Contamination Events: Exposure, Influence, and Sensitivity, 1830
- Double-Pass Photovoltaic-Thermal Solar Collector, 434
- Explicit Integration Method for Extended-Period Simulation of Water Distribution Systems, 969

## SUBJECT INDEX

- Identification of Contaminant Sources in Water Distribution Systems using Simulation – Optimization Method: Case Study, 1827
- Impact of Sensor Detection Limits on Protecting Water Distribution Systems from Contamination Events, 1833
- Iron Oxide Enhanced Chlorine Decay and Disinfection By-Product Formation, 767
- Irrigation Scheduling with Travel Times, 1188
- Locating Monitors in Water Distribution Systems: Red Team-Blue Team Exercise, 1832
- Methodology for Locating Monitoring Stations to Detect Contamination in Potable Water Distribution Systems, 1162
- Mixed-Integer Approach for Obtaining Unique Solutions in Source Inversion of Water Networks, 1826
- Multi-Objective Trade-Offs between Cost and Reliability in the Replacement of Water Mains, 1809
- Novel Cellular Automata Approach to Optimal Water Distribution Network Design, 250
- Operational Response Model for Physically Attacked Water Networks using NSGA-II, 283
- Optimal Design of Redundant Water Distribution Networks using a Cluster of Workstations, 1840
- Optimal Scheduling of Replacement and Rehabilitation of Water Distribution Systems, 1155
- Optimization of Water Distribution Networks using Integer Linear Programming, 981
- Reduction of Physical Threats to Water Distribution Systems, 1822
- Sensor Placement in Water Networks: A Stochastic Programming Approach, 1820
- Simplified Numerical Method to Evaluate the Mechanical Strength of Cast Iron Water Pipes, 1143
- Solution for Water Distribution Systems under Pressure-Deficient Conditions, 1818
- Water flow**
- Analyses of Drought Flow in Recession Period, 1085
- Analysis of Deep Moisture Barriers in Expansive Soils. II: Water Flow Formulation and Implementation, 44
- Design of Rock Protection to Prevent Erosion by Water Flows Down Steep Slopes, 1044
- Economic-Based Optimization of Panama Canal System Operations, 1852
- Effect of Convergence on Nonlinear Flow in Porous Media, 973
- Mean Flow and Turbulence Structure in Vertical Slot Fishways, 1007
- Model for the Simulation of Water Flows in Irrigation Districts. I: Description, 1199
- Modified Kostiakov Infiltration Function: Accounting for Initial and Boundary Conditions, 1230
- Riprap Failure at Circular Bridge Piers, 966
- Transition from Ripples to Dunes, 1063
- Unstructured Grid Finite-Volume Algorithm for Shallow-Water Flow and Scalar Transport with Wetting and Drying, 968
- Water hammer**
- Range of Validity of the Transient Damping Leakage Detection Method, 1025
- Time-Line Interpolation Errors in Pipe Networks, 961
- Water jets**
- Investigation of the Influence of Sprinkler Fins and Dissolved Air on Jet Flow, 1168

## Water pipelines

### Water levels

- Application of Support Vector Machine in Lake Water Level Prediction, 1091

Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Theory, 1186

Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Simulation Results, 1187

Ice Stresses in Reservoirs: Effect of Water Level Fluctuations, 183

Influence of Uncertainties in the Estimation Procedure of Floodwater Level, 1036

### Water management

Activated Sludge Process Modification for Sludge Yield Reduction using Pulp and Paper Wastewater, 715

Delay between Sensing and Response in Water Contamination Events, 1145

Detection of Illegal Dump Deposit with GPR: Case Study, 1955

Developing Multiple Indicators and Triggers for Drought Plans, 1817

Economically Driven Simulation of Regional Water Systems: Friant-Kern, California, 1849

Effect of Forecast-Based Pricing on Irrigated Agriculture: A Simulation, 1843

Elevation-Dependent Management of the Edwards Aquifer: Linked Mathematical and Dynamic Programming Approach, 1836

Examining the Confluence of Environmental and Water Concerns, 2065

Managing Irrigation for Better River Ecosystems — A Case Study of the Middle Rio Grande, 1229

Methods for Developing Naturalized Monthly Flows at Gaged and Ungaged Sites, 1076

Model for the Simulation of Water Flows in Irrigation Districts. I: Description, 1199

Model for the Simulation of Water Flows in Irrigation Districts. II: Application, 1200

Operating Reservoirs in Changing Conditions, 2078

Sensor Placement in Municipal Water Networks with Temporal Integer Programming Models, 1823

Set Sprinkler Irrigation and Its Cost, 1214

Sharing Water in Times of Scarcity: Guidelines and Procedures in the Development of Effective Agreements to Share Water Across Political Boundaries, 2085

State Water Resources Planning in the United States, 2091

Tipon: Water Engineering Masterpiece of the Inca Empire, 2093

Valuing Fisheries and Wetlands using Integrated Economic-Hydrologic Modeling — Mekong River Basin, 1850

### Water pipelines

Adjusting Nodal Demands in SCADA Constrained Real-Time Water Distribution Network Models, 942

Condition Assessment of Water Distribution Pipes, 1151

Deflection Protection, 2032

Detection of Partial Blockage in Single Pipelines, 952

Hydraulic Analysis and Direct Design of Multiple Outlets Pipelines Laid on Flat and Sloping Lands, 1226

Optimization of Water Distribution Networks using Integer Linear Programming, 981

## Water pipelines

Simplified Numerical Method to Evaluate the Mechanical Strength of Cast Iron Water Pipes, 1143

### Water policy

Achieving Water Use Efficiency in Irrigation Districts, 1846

Developing Multiple Indicators and Triggers for Drought Plans, 1817

Integrated Economic, Hydrologic, and Institutional Analysis of Policy Responses to Mitigate Drought Impacts in Rio Grande Basin, 1851

### Water pollution

Asymptotic Solutions for One-Dimensional Dispersion in Rivers, 940

Chromium Redox Chemistry in Drinking Water Systems, 694

Contaminant Transport Model for Unsaturated Soil using Fuzzy Approach, 752

Delay between Sensing and Response in Water Contamination Events, 1145

Dioxin in Storm-Water Runoff in Houston, Texas, 770

Disinfection By-Product Formation during Long-Term Water Storage in Alaska, 188

Distribution of Methylmercury in a Mercury-Contaminated Ecosystem, 1961

Distribution System Contamination Events: Exposure, Influence, and Sensitivity, 1830

Estimating 7Q10 Confidence Limits from Data: A Bootstrap Approach, 1821

Evaluation of Decolorization, Mineralization, and Toxicity Reduction of an Azo Dye C.I. Reactive Black 5 in a Counter-current Bubble Column by Ozone, 1940

Field Investigation at a Chlorinated Ethylene Contaminated Site, 1963

Generalized Fick's Law and Fractional ADE for Pollution Transport in a River: Detailed Derivation, 1079

Impact of Sensor Detection Limits on Protecting Water Distribution Systems from Contamination Events, 1833

Mixed-Integer Approach for Obtaining Unique Solutions in Source Inversion of Water Networks, 1826

Modeling the Sorption of Fluoride onto Alumina, 608

Multibjective Optimal Waste Load Allocation Models for Rivers using Nondominated Sorting Genetic Algorithm-II, 1814

New Life for Onondaga Lake, 2014

Opportunity Costs of Residential Best Management Practices for Stormwater Runoff Control, 1810

PCB Volatilization from Sediments, 594

Quantifying Long-Term NPS Pollutant Flux in an Urbanizing Watershed, 643

Removal of Inorganic Mercury from Polluted Water using Structured Nanoparticles, 621

Removal of Lead from Contaminated Water and Clay Soil using a Biosurfactant, 687

RiverSpill: A National Application for Drinking Water Protection, 970

Treatment of Acid Rock Drainage in a Meromictic Mine Pit Lake, 640

Urban Runoff Quality Characterization and Load Estimation in Saskatoon, Canada, 750

Watershed-Scale Impacts of Forest Buffers on Water Quality and Runoff in Urbanizing Environment, 1815

## 2006 ASCE TRANSACTIONS

### Water pressure

Parametric Study of One-Dimensional Solute Transport in Deformable Porous Media, 870

### Water quality

Analytical Urban Storm Water Quality Models Based on Pollutant Buildup and Washoff Processes, 734

Concentration—Duration—Frequency Curves for pH in a Stream in the Great Smoky Mountains, 765

Consequence Management Optimization for Contaminant Detection and Isolation, 1829

Contaminant Warning in Water Networks: General Mixed-Integer Linear Models for Sensor Location Design, 1824

Contamination Source Identification in Water Systems: A Hybrid Model Trees-Linear Programming Scheme, 1828

Development of a Simple Phosphorus Model for a Large Urban Watershed: A Case Study, 642

Effect of Controlled Drainage and Vegetative Buffers on Drainage Water Quality from Wastewater Irrigated Fields, 1182

Effect of Long Internal Waves on the Quality of Water Withdrawn from a Stratified Reservoir, 1047

Estimating 7Q10 Confidence Limits from Data: A Bootstrap Approach, 1821

Evaluating Bioretention Hydrology and Nutrient Removal at Three Field Sites in North Carolina, 1232

Evaluation of Oxygen Sag Equation for Second-Order Biochemical Oxygen Demand Decay, 766

Generalized Fick's Law and Fractional ADE for Pollution Transport in a River: Detailed Derivation, 1079

Identification of Contaminant Sources in Water Distribution Systems using Simulation—Optimization Method: Case Study, 1827

Impact of Agriculture on Water Quality in the North Carolina Middle Coastal Plain, 1191

Impact of Tunnel Reconstruction on Stream Water Quality in Great Smoky Mountains Natl. Park, 1129

Increasing Stormwater Outfall Duration, Magnitude, and Volume through Combined Sewer Separation, 1119

Integrated Hydrodynamic and Water Quality Modeling System to Support Nutrient Total Maximum Daily Load Development for Wissahickon Creek, Pennsylvania, 644

Jackson River Modeling: 50-Year Perspective, 719

Model for Estimating Acute Health Impacts from Consumption of Contaminated Drinking Water, 1831

Multiple Tandem Jets in Cross-Flow, 1027

Response of a Tropical Reservoir to Bubbler Destabilization, 682

Runoff Quality Analysis of Urban Catchments with Analytical Probabilistic Models, 1801

Sensor Placement in Water Networks: A Stochastic Programming Approach, 1820

Standard Guidelines for the Design of Urban Subsurface Drainage (ASCE/EWRI 12-05); Standard Guidelines for the Installation of Urban Subsurface Drainage (ASCE/EWRI 13-05); and Standard Guidelines for the Operation and Maintenance of Urban Subsurface Drainage (ASCE/EWRI 14-05), 2090

Surface Analysis of Chesapeake Bay Water Quality Response to Different Nutrient and Sediment Loads, 625

## SUBJECT INDEX

## Water treatment

- Three-Dimensional Modeling for Estimation of Hydraulic Retention Time in a Reservoir, 710
- Uncertainty Analysis for Coupled Waterhead and Water Quality Modeling Systems, 1838
- Uncertainty Analysis of Conventional Water Treatment Plant Design for Suspended Solids Removal, 744
- Urban Runoff Quality Characterization and Load Estimation in Saskatoon, Canada, 750
- Water resources**
- Case Study: Application of GPR to Detection of Hidden Dangers to Underwater Hydraulic Structures, 932
- Cold Regions Engineering 2006 — Current Practices in Cold Regions Engineering, 2056
- Considering Location, Compliance, and Storage in Decisions on Brackish Water Resource Development, 1853
- Economic Optimization of Conjunctive Use of Surface Water and Groundwater at the Basin Scale, 1848
- Great Works on Urban Water Resources (1962-2001), 2071
- Groundwater Remediation Design using Multiscale Genetic Algorithms, 1837
- Industrial Water Use Kuznets Curve: Evidence from Industrialized Countries and Implications for Developing Countries, 1819
- Management and Construction of the Three Gorges Project, 349
- Modeling of Lake Ice Characteristics in North America using Climate, Geography, and Lake Bathymetry, 187
- Performance-Based Optimization of Land and Water Resources within Irrigation Schemes. I: Method, 1201
- Performance-Based Optimization of Land and Water Resources within Irrigation Schemes. II: Application, 1202
- Semidistributed Form of the Tank Model Coupled with Artificial Neural Networks, 1112
- State Water Resources Planning in the United States, 2091
- Watershed and River Systems Management Program: Overview of Capabilities, 1174
- Water reuse**
- EDTA, NTA, Alkylphenol Ethoxylate and DOC Attenuation during Soil Aquifer Treatment, 674
- Electrochemical Oxidation and Ozonation for Textile Wastewater Reuse, 619
- Evaluation of Water Reuse Technologies for the Textile Industry, 618
- Modeling Water Movement and Flux from Membrane Pervaporation Systems for Wastewater Microirrigation, 714
- Water Reuse/Recycling and Reclamation in Semiarid Zones: The Israeli Case of Salination and "Hard" Surfactants Pollution of Aquifers<sup>1</sup>, 675
- Water rights**
- Evaluation of Programs for Regulating Withdrawal of Surface Water under the Riparian Legal System, 1841
- Water sampling**
- Concentration — Duration — Frequency Curves for pH in a Stream in the Great Smoky Mountains, 765
- Water shortage**
- Can Reservoir Storage Be Uneconomically Large?, 1854
- Nonparametric Approach for Bivariate Drought Characterization using Palmer Drought Index, 1084
- Sharing Water in Times of Scarcity: Guidelines and Procedures in the Development of Effective Agreements to Share Water Across Political Boundaries, 2085
- Water storage**
- Considering Location, Compliance, and Storage in Decisions on Brackish Water Resource Development, 1853
- Derived Operating Rules for Allocating Recharges and Withdrawals among Unconnected Aquifers, 1803
- Reservoir Storage Curve Estimation Based on Remote Sensing Data, 1087
- Water supply**
- Considering Location, Compliance, and Storage in Decisions on Brackish Water Resource Development, 1853
- Derived Willingness-to-Pay for Household Water Use with Price and Probabilistic Supply, 1845
- Disinfection By-Product Formation during Long-Term Water Storage in Alaska, 188
- Double-Pass Photovoltaic-Thermal Solar Collector, 434
- Effect of Long Internal Waves on the Quality of Water Withdrawn from a Stratified Reservoir, 1047
- Frazil Ice Blockage of Water Intakes in the Great Lakes, 1011
- Lodging Velocity for an Emergent Aquatic Plant in Open Channels, 1032
- Methodology for Locating Monitoring Stations to Detect Contamination in Potable Water Distribution Systems, 1162
- Productivity and Equity of Different Irrigation Schedules under Limited Water Supply, 1203
- Water table**
- Development of GIS-Based Model to Estimate Relative Reductions in Crop Yield due to Salinity and Waterlogging, 1227
- Evaluating Regional Solutions to Salinization and Waterlogging in an Irrigated River Valley, 1166
- Seepage from a Rectangular Ditch to the Groundwater Table, 1192
- Seepage to a Drainage Ditch and Optimization of Its Shape, 1234
- Water tanks**
- Effects of Soil-Structure Interaction on the Analysis of Cylindrical Tanks, 1975
- In-Service Durability Performance of Water Tanks, 1377
- Water temperature**
- Cross-Shore Internal Waves in Zanpa Coastal Region of Okinawa Island, 1858
- Water treatment**
- Air/Water Oxygen Transfer in a Biological Aerated Filter, 603
- Anaerobic Biodegradation of RDX and TCE: Single- and Dual-Contaminant Batch Tests, 1949
- Analytic Solution on Critical Suspended Particle Size and Minimum Collection Efficiency in Deep Bed Filtration, 741

## Water treatment

- Arsenic Removal from Water by Moving Bed Active Filtration, 583  
Biodegradability of Surfactants under Aerobic, Anoxic, and Anaerobic Conditions, 613  
Chromium Redox Chemistry in Drinking Water Systems, 694  
Comparative Inactivation of *Bacillus Subtilis* Spores and MS-2 Coliphage in a UV Reactor: Implications for Validation, 760  
Deterministic-Based Model of Slow Sand Filtration. I: Model Development, 697  
Deterministic-Based Model of Slow Sand Filtration. II: Model Application, 698  
Development of a University Laboratory Chemical Inventory and Exchange Program, 1945  
Dissolution of Wollastonite in a Packed Bed Contactor, 634  
Effect of Metallic Iron Concentration on End-Product Distribution during Metallic Iron-Assisted Autotrophic Denitrification, 712  
Effects of Surface-Bound Fe<sup>2+</sup> on Nitrate Reduction and Transformation of Iron Oxide(s) in Zero-Valent Iron Systems at Near-Neutral pH, 658  
Electrocoagulation of SiIca Nanoparticles in Wafer Polishing Wastewater by a Multichannel Flow Reactor: A Kinetic Study, 772  
Equilibrium Approach to Integrating Regional Surface Water Treatment and Limited Groundwater Pumping Capacity, 1847  
Factors Influencing Arsenite Removal by Zero-Valent Iron, 749  
Feasibility of Using Natural Zeolites to Remove Sodium from Coal Bed Methane-Produced Water, 771  
Field Study to Investigate WIDE Technology for TCE Extraction, 880  
Impact of Particle Aggregated Microbes on UV Disinfection. I: Evaluation of Spore — Clay Aggregates and Suspended Spores, 666  
Isotopic Fractionation of Tetrachloroethene Undergoing Biodegradation Supported by Endogenous Decay, 681  
Lime-Soda Softening Process Modifications for Enhanced NOM Removal, 600  
MS2 Inactivation by Chloride-Assisted Electrochemical Disinfection, 584  
Multiyear Temporal Changes in Chlorinated Solvent Concentrations at 23 Monitored Natural Attenuation Sites, 672  
New Life for Onondaga Lake, 2014  
Operational Optimization and Mass Balances in a Two-Stage MBR Treating High Strength Pet Food Wastewater, 691  
Polychromatic UV Fluence Measurement using Chemical Actinometry, Biodosimetry, and Mathematical Techniques, 693  
Precipitative Removal of As, Ba, B, Cr, Sr, and V using Sodium Carbonate, 653  
Procedure to Quantify Biofilm Activity on Carriers used in Wastewater Treatment Systems, 745  
Quantitative Model of Coagulation with Inorganic Polymer Flocculant PACl: Application of the PCNM, 647  
Remediation of RDX-Contaminated Water using Alkaline Hydrolysis, 610  
Removal of Inorganic Mercury from Polluted Water using Structured Nanoparticles, 621

## 2006 ASCE TRANSACTIONS

- Simultaneous and Sequential Photosolysis of TCE and PCE, 586  
Simultaneous Removal of Cd and Cr(VI) using Fe-Loaded Zeolite, 632  
Treatment of Dilute Wastewaters using a Novel Submerged Anaerobic Membrane Bioreactor, 604  
Type II Settling Data Analysis, 598  
Uncertainty Analysis of Conventional Water Treatment Plant Design for Suspended Solids Removal, 744  
Wastewater Treatment with Biomass Attached to Porous Geotextile Baffles, 614  
**Water treatment plants**  
Fundamentals of Bubble Formation during Coagulation and Sedimentation Processes, 664  
Quenching Thornton's Thirst, 2043  
**Water use**  
Achieving Water Use Efficiency in Irrigation Districts, 1846  
Derived Willingness-to-Pay for Household Water Use with Price and Probabilistic Supply, 1845  
Industrial Water Use Kuznets Curve: Evidence from Industrialized Countries and Implications for Developing Countries, 1819  
Irrigation Potential of the TRASVASE System (Santa Elena Peninsula, Guayas, Ecuador), 1215  
**Water waves**  
Control of Scour at Vertical Circular Piles under Waves and Current, 959  
Fully Nonlinear Boussinesq-Type Equations for Waves and Currents over Porous Beds, 457  
Scattering of Linear Water Waves by a Fixed and Infinitely Long Rectangular Structure Parallel to a Vertical Wall in Oblique Seas, 1865  
Solving Wave Dispersion Equation for Dissipative Media using Homotopy Perturbation Technique, 1857  
Viscous Effect on the Roll Motion of a Rectangular Structure, 454  
**Waterfront structures**  
Generic Design of V-Shape and Vane-Type Breakwaters to Reduce Green Water Load Effects on Deck Structures and Containers of Ships: Case Study, 1860  
**Watershed management**  
BMP Technology in Urban Watersheds: Current and Future Directions, 2052  
Development of a Simple Phosphorus Model for a Large Urban Watershed: A Case Study, 642  
Effects of Flood Control Structures on Flood Response for Hurricane Floyd in the Brandywine Creek Watershed, Pennsylvania, 1115  
Evaluation of Programs for Regulating Withdrawal of Surface Water under the Riparian Legal System, 1841  
Global Positioning System/GIS-Based Approach for Modeling Erosion from Large Road Networks, 1113  
Hydrologic Modeling of an Eastern Pennsylvania Watershed with NEXRAD and Rain Gauge Data, 1128  
Numerical Simulation of Depleted Uranium Transport in a Desert Environment using a Distributed Parameter Watershed Model, 1960  
Quantifying Long-Term NPS Pollutant Flux in an Urbanizing Watershed, 643

## SUBJECT INDEX

## Wavelength

- Study of Total Maximum Daily Load and Nonpoint Source Pollution Control Strategies for Reservoir Watershed, 1954
- Uncertainty Analysis for Coupled Waterhed and Water Quality Modeling Systems, 1838
- Watershed and River Systems Management Program: Overview of Capabilities, 1174
- Watershed Environmental Hydrology Model: Environmental Module and Its Application to a California Watershed, 1099
- Watershed-Scale Impacts of Forest Buffers on Water Quality and Runoff in Urbanizing Environment, 1815
- Watersheds**
- Numerical Simulation of Depleted Uranium Transport in a Desert Environment using a Distributed Parameter Watershed Model, 1960
- Watershed Surface and Subsurface Spatial Intraflows Model, 1071
- Waterways**
- Effectiveness of Bermuda Grass as Vegetative Cover in Grassed Waterway: A Simulated Study, 1196
- Glancing-Blow Impact Forces by a Barge Train on a Lock Approach Wall, 1150
- Numerical and Experimental Study on Ship Wash Including Wave-Breaking on Shore, 1889
- Wave crest**
- Physical and Numerical Comparison of Flow over Ogee Spillway in the Presence of Tailwater, 1068
- Wave diffraction**
- Development and Validation of a Quasi-Three-Dimensional Coastal Area Morphological Model, 1900
- Scattering of Linear Water Waves by a Fixed and Infinitely Long Rectangular Structure Parallel to a Vertical Wall in Oblique Seas, 1865
- Wave dispersion**
- Fully Nonhydrostatic Modeling of Surface Waves, 479
- Solving Wave Dispersion Equation for Dissipative Media using Homotopy Perturbation Technique, 1857
- Wave energy**
- Cross-Shore Internal Waves in Zanpa Coastal Region of Okinawa Island, 1858
- Parameter Variation and Part-Load Efficiencies of Wave Energy Conversion, 421
- Response Amplitude and Hydrodynamic Force for a Buoy over a Convex, 1864
- Wave equations**
- Green's Function of the Linearized de Saint-Venant Equations, 447
- Numerical Simulation of Solitary Waves using Velocity-Vorticity Formulation of Navier-Stokes Equations, 456
- Wave forces**
- Hydrodynamic Characteristics of Pile-Supported Vertical Wall Breakwaters, 1863
- Improved Analysis Method for Wave-Induced Pipeline Stability on Sandy Seabed, 1727
- Maximum Fluid Forces in the Tsunami Runup Zone, 1903
- Scattering of Linear Water Waves by a Fixed and Infinitely Long Rectangular Structure Parallel to a Vertical Wall in Oblique Seas, 1865
- Wave Forcing of Small Floating Bodies, 1874
- Wave measurement**
- Application of Artificial Neural Network Model in Estimation of Wave Spectra, 1894
- Distributions of Wave Steepness and Surf Parameter, 1855
- Particle Image Velocity Measurements of Undular and Hydraulic Jumps, 1060
- Wave overtopping**
- Case Study: Dam Safety during Construction, Lessons of the Overtopping Diversion Works at Aguamilpa Dam, 1045
- Experimental Analysis and Numerical Simulations of Waves and Current Flows around Low-Crested Rubble-Mound Structures, 1856
- Wave propagation**
- Analytical Solution of the Burgers Equation for Simulating Translatory Waves in Conveyance Channels, 951
- Chebyshev Finite-Spectral Method for 1D Bousinesq-Type Equations, 1876
- Classifying River Waves by the Saint Venant Equations Decoupled in the Laplacian Frequency Domain, 998
- Damping in Shear Beam Structures and Estimation of Drift Response, 522
- Fully Nonhydrostatic Modeling of Surface Waves, 479
- Laboratory Observation of Solitary Wave Propagating over a Submerged Rectangular Dike, 488
- Nondestructive Dynamic Evaluation of a Concrete Reaction Wall — Numerical and Experimental Studies, 1389
- Normal Transmission of S-Wave across Parallel Fractures with Coulomb Slip Behavior, 498
- Performances of Hydraulics and Bedload Sediment Flushing in Rigid Channel using Surge Flows, 1183
- Three-Dimensional Linear and Simplified Nonlinear Soil Response Methods Based on an Input Wave Field, 46
- Wave reflection**
- Hydrodynamic Characteristics of Pile-Supported Vertical Wall Breakwaters, 1863
- Wave runup**
- Maximum Fluid Forces in the Tsunami Runup Zone, 1903
- Numerical and Experimental Study on Ship Wash Including Wave-Breaking on Shore, 1889
- Well-Balanced Finite-Volume Model for Long-Wave Runup, 1866
- Wave spectra**
- Application of Artificial Neural Network Model in Estimation of Wave Spectra, 1894
- Prediction of Long Forcing Waves for Harbor Agitation Studies, 1871
- Wave velocity**
- Control of Scour at Vertical Circular Piles under Waves and Current, 959
- Correlation between Cyclic Resistance Ratios of Intact and Reconstituted Offshore Saturated Sands and Silts with the Same Shear Wave Velocity, 924
- Wavelength**
- Transition from Ripples to Dunes, 1063

## Waves

### Waves

- Antiplane (SH) Waves Diffraction by a Semicircular Cylindrical Hill Revisited: An Improved Analytic Wave Series Solution, 550
- Application of a Bottom Boundary Layer Model in Contrasting Wave and Current Environments: Grays Harbor, Washington, 1890
- Critical Flotation Density of Pipelines in Soils Liquefied by Waves and Density of Liquefied Soils, 1879
- Dam-Break Wave-Front Celerity, 938
- Development and Verification of an Analytical Solution for Forecasting Nonlinear Kinematic Flood Waves, 1107
- Flood Plain Filling by a Monoclinal Flood Wave, 984
- Green's Function of the Linearized de Saint-Venant Equations, 447
- Laboratory Study of Liquefaction due to Wave-Seabed Interaction, 856
- Liquefaction around Pipelines under Waves, 1880
- Liquefaction Phenomena underneath Marine Gravity Structures Subjected to Wave Loads, 1885
- Numerical Modeling of Wave-Induced Liquefaction around Pipelines, 1881
- Plane Impulse Waves in Reservoirs, 1888
- Stability of Submarine Pipelines on Liquefied Seabeds, 1878
- Wave Interaction with a Flexible Porous Breakwater in a Two-Layer Fluid, 540

### Weather

- Determining Free Flight Performance by Surveying Engineering Techniques, 1653

### Weathering

- Environmental Effects on Epoxy Adhesives Employed for Restoration of Historical Buildings, 1344

### Webs

- Behavior of Corrugated Web I-Girders under In-Plane Loads, 517
- Fatigue Life of Girders with Trapezoidal Corrugated Webs, 1543
- Finite-Element Simulation and Design of Cold-Formed Steel Channels Subjected to Web Crippling, 1633
- Mechanics of Web Panel Postbuckling Behavior in Shear, 1595
- Shear Behavior of Corrugated Web Bridge Girders, 1457
- Size Effect on Shear Strength of Deep Beams: Investigating with Strut-and-Tie Model, 1507

### Wedges

- Stress Zones near Displacement Piers: II. Radial Cracking and Wedging, 783

### Weighing devices

- Automatic Speed Calibration Methodology for Traffic Monitoring Sites, 1666
- Entropy Application to Improve Construction Finance Decisions, 397

### Weight

- Multivariate Simulation and Multimodal Dependence Modeling of Vehicle Axle Weights with Copulas, 1767

- Structural Weight Optimization of Frames Using Tabu Search. I: Optimization Procedure, 1622

## 2006 ASCE TRANSACTIONS

### Structural Weight Optimization of Frames Using Tabu Search. II: Evaluation and Seismic Performance, 1623

### Unit Weight of Municipal Solid Waste, 893

### Weirs

- Broad-Crested Weirs with Rectangular Compound Cross Sections, 1193

### Minimum Specific Energy and Critical Flow Conditions in Open Channels, 1221

### Nonlinear PLS Method for Side Weir Flows, 1219

### Performance of Slit Weir, 1029

### Welds

#### Change of Weld Residual Stresses due to Loss of Material, 1630

#### Experimental Performance of Link-to-Column Connections in Eccentrically Braced Frames, 1557

#### Fatigue Behavior of Welded Aluminum Light Pole Support Details, 1628

#### Residual Stress Measurement of Welded Aluminum Light Pole Supports, 1597

#### Tests and Design of Aluminum Alloy Compression Members, 1546

#### Virtual Experiments for Welded Structural Steel Connections, 1983

### Wells

#### Evaluation of Traditional and Nontraditional Optimization Techniques for Determining Well Parameters from Step-Drawdown Test Data, 1135

#### Flow Depletion Induced by Pumping Well from Finite Length of Stream, 1222

#### Installation of Horizontal Wells in Landfilled Waste using Directional Drilling, 859

#### Optimal Pumping from Skimming Wells, 1118

#### Simplified Kernel Method for Flow to Large Diameter Wells, 1173

### Wetlands

#### Artificial Neural Network Modeling of Dissolved Oxygen in a Wetland Pond: The Case of Hovi, Finland, 1090

#### Case Study: Design and Operation of Sustainable Urban Infiltration Ponds Treating Storm Runoff, 1775

#### Valuing Fisheries and Wetlands using Integrated Economic-Hydrologic Modeling — Mekong River Basin, 1850

### White noise

#### Optimal Vibration Absorber with Nonlinear Viscous Power Law Damping and White Noise Excitation, 439

### Width

#### Effective Slab Width in Prestressed Twin-Girder Composite Decks, 1573

#### Structural Adequacy of Flexible Pavements with Types and Widths of Shoulders, 1670

### Wildlife

#### Achievement of 100% Removal of Oil from Feathers Employing Magnetic Particle Technology, 661

#### Optimizing Airport Construction Site Layouts to Minimize Wildlife Hazards, 1257

### Wind

#### Analytical Study of Turbulent Pollutant Dispersion near a Low Hill, 444

## SUBJECT INDEX

- Hydrodynamic Characterization and Modeling of the Arabian Gulf, 1859
- Wind direction**  
A Review of Wind-Resource-Assessment Technology, 420
- Wind energy**  
Challenges in Predicting Power Output from Offshore Wind Farms, 430  
A Review of Wind-Resource-Assessment Technology, 420
- Wind forces**  
Curtain Wall Designs for Wind and Blast: Three Case Studies, 99  
Frequency Dependence of Human Response to Wind-Induced Building Motion, 1468  
Modeling Response of Flexible High-Aspect-Ratio Wings to Wind Turbulence, 70  
Nonconstrained Flagpole Design Formula, 1454  
Validating Wind-Induced Response of Tall Buildings: Synopsis of the Chicago Full-Scale Monitoring Program, 1588
- Wind gusts**  
Safety Analysis of Moving Road Vehicles on a Long Bridge under Crosswind, 478
- Wind loads**  
Analysis of Long Span Bridge Response to Winds: Building Nexus between Flutter and Buffeting, 1637  
Bivariate Quasi-Steady Model for Prediction of Roof Corner Pressures, 61  
Database-Assisted Design of Low-Rise Buildings: Aerodynamic Considerations for a Practical Interpolation Scheme, 1529  
Exposure Categories and Transitions for Design Wind Loads, 1612  
HAZUS-MH Hurricane Model Methodology. I: Hurricane Hazard, Terrain, and Wind Load Modeling, 1930  
Hurricane Mitigation of the Florida House Learning Center, 1382  
Implementation of a Feasible Control Design Process Incorporating Robustness Criteria for Wind-Excited High-Rise Buildings, 1448  
Increased Snow Loads and Wind Actions on Existing Buildings: Reliability of the Norwegian Building Stock, 1618  
Peak Wind Load Comparison: Theoretical Estimates and ASCE 7, 1551  
A Review of Wind-Resource-Assessment Technology, 420  
Revisiting Multinode Coupled Bridge Flutter: Some New Insights, 551
- Wind pressure**  
Design of Window Glass for Lateral Pressures, 95  
Exposure Categories and Transitions for Design Wind Loads, 1612  
A Review of Wind-Resource-Assessment Technology, 420
- Wind speed**  
Catastrophe-Induced Destruction and Reconstruction, 1924  
A Review of Wind-Resource-Assessment Technology, 420
- Wood structures**
- Wind tunnel test**  
Computational Fluid Dynamics Simulation of Concentration Distributions from a Point Source in the Urban Street Canyons, 67
- Full-Scale Measurements to Investigate Rain — Wind Induced Cable-Stay Vibration and its Mitigation, 133
- Wind tunnels**  
Validating Wind-Induced Response of Tall Buildings: Synopsis of the Chicago Full-Scale Monitoring Program, 1588
- Wind waves**  
Distributions of Wave Steepness and Surf Parameter, 1855
- Window glass**  
Design of Architectural Glazing to Resist Earthquakes, 96  
Design of Window Glass for Lateral Pressures, 95
- Wire products**  
Mechanical Model for Unbonded Seven-Wire Tendon with Single Broken Wire, 576
- Wisconsin**  
Counterpoint, 2003
- Women**  
Changing Our World: True Stories of Women Engineers, 2054  
Indirect Discrimination in Construction Organizations and the Impact on Women's Careers, 1250
- Wood**  
Effect of Test Piece Size on Rheological Behavior of Wood Composites, 518  
Failure Behavior of Spruce Wood under Bending-Shear Combined Stress Field, 1271  
Mechanical Grading of Round Timber Beams, 1261  
Potential of Wood Waste Ash as an Additive in Concrete, 1330  
Reliability of Steel Dowelled Wood Connections Designed to ASCE 16-95, 1482
- Wood beams**  
Long-Term Behavior of Timber-Concrete Composite Beams. II: Numerical Analysis and Simplified Evaluation, 1441
- Wood preservatives**  
Biodegradation of Surfactant Flush Wastewater from Wood Treatment Soil, 595
- Wood structures**  
Damage and Damage Prediction for Wood Shearwalls Subjected to Simulated Earthquake Loads, 1381  
Effects of Vertical Load and Hold-Down Anchors on the Cyclic Response of Wood Framed Shear Walls, 1579  
Long-Term Behavior of Timber-Concrete Composite Beams. I: Finite Element Modeling and Validation, 1440  
Long-Term Behavior of Timber-Concrete Composite Beams. II: Numerical Analysis and Simplified Evaluation, 1441  
Midply Wood Shear Wall System: Concept and Performance in Static and Cyclic Testing, 1578  
Performance of Wood Shear Walls Sheathed with FRP-Reinforced OSB Panels, 1453  
Racking Performance of Structural Insulated Panels, 1617

- Racking Performance of Tall Unblocked Shear Walls, 1452  
Seismic Reliability of Low-Rise Nonsymmetric Wood-frame Buildings, 1513  
Structural Analysis of the Wooden Structure of the Historical Building of Ali Qapu, 1616  
Wood Members Strengthened with Mechanically Fastened FRP Strips, 228
- Workplace diversity**  
Indirect Discrimination in Construction Organizations and the Impact on Women's Careers, 1250  
Summary Report: Leading the Way as Full Diversity Partners — A Senior Executive Workshop on Critical Skills for Courageous Leaders, 1905
- Workspace**  
Critical Space Analysis, 335  
Fundamental Principles for Avoiding Congested Work Areas — A Case Study, 1989  
Human-Assisted Obstacle Avoidance System using 3D Workspace Modeling for Construction Equipment Operation, 262  
Lighting Requirements for Nighttime Highway Construction, 331  
Neural Network-Wavelet Microsimulation Model for Delay and Queue Length Estimation at Freeway Work Zones, 1697  
Using GPS to Measure the Impact of Construction Activities on Rural Interstates, 339
- Wyoming**  
Impact of Politics on the Colorado River Basin Water Agreement: In-Depth Administrative Analysis, 1911
- Yield**  
Damage-Coupled Progressive Failure and Yield Line Analyses of Metal Plates, 483  
Runoff and Sediment Yield Modeling using Artificial Neural Networks: Upper Siwane River, India, 1078
- Yield stress**  
Comparison in Undrained Shear Strength between Undisturbed and Remolded Ariake Clays, 806  
Experimental Study of Macro- and Microbehavior of Natural Diatomite, 833
- Young's modulus**  
Nondestructive and Laboratory Evaluation of Damage Gradients in Concrete Structure Exposed to Cryogenic Temperatures, 1368
- Zeolite**  
Effect of Structure on the Geotechnical Properties of Bauxite Residue, 792
- Zinc**  
Advanced Oxidation for Treatment of Aqueous Extracts from EDTA Extraction of Pb and Zn Contaminated Soil, 740  
Evaluating an Electrokinetically Driven Extraction Method for Measuring Heavy Metal Soil Contamination, 641

## Author Index

- Abadir, Jane M.**  
*see* Khedr, Safwan A., 1262
- Abas, Hassan H.**  
*see* Sause, Richard, 1543
- Abaz, Khaled A., P.E.**  
 Iterative Linear Approach for Nonlinear Nonhomogeneous Stochastic Pavement Management Models, 1689
- Abbas, Hassan H.**  
 Behavior of Corrugated Web I-Girders under In-Plane Loads, 517  
*see* Driver, Robert G., 1457
- Abbas, Montasir, P.E.**  
 Multiobjective Plan Selection Optimization for Traffic Responsive Control, 1702
- Abbas, S. M.**  
*see* Varadarajan, A., 35
- Abbasi, Fariborz**  
*see* Rocha, David, 1211
- Abdel-Maksoud, Mohamed Gamal**  
*see* Marino, Gennaro G., P.E., 1278
- Abdelrazag, Ahmad**  
*see* Kijewski-Correa, Tracy, 1588
- Abdel-Rohman, M.**  
*see* Almutairi, Naif B., 500
- Abdullah, Yasir M.**  
*see* Anderson, Michael D., 1784
- Abdul-Rahman, H.**  
 Delay Mitigation in the Malaysian Construction Industry, 300
- Aberle, J.**  
 Data Interpretation for In Situ Measurements of Cohesive Sediment Erosion, 990
- Abichou, Tarek**  
 Characterization of Methane Flux and Oxidation at a Solid Waste Landfill, 607
- Design Considerations for Lysimeters Used to Evaluate Alternative Earthen Final Covers, 919
- Abichou, Tarek, P.E.**  
*see* Albright, William H., 906
- Abida, H.**  
 Grass Swale-Perforated Pipe Systems for Stormwater Management, 1170
- Abolmaali, Ali**  
*see* Jung, Jiwon, 164
- AbouRizk, Simaan**  
*see* Agbulos, Albert, 317  
*see* Chung, Tae Hwan, 376
- AbouRizk, Simaan M.**  
*see* Sharma, Vishal, 409  
*see* Song, Lingguang, 281
- Abousleiman, Younane**  
*see* Ekbotte, Shailesh, 510
- Aboutaha, Riyad**  
*see* Wattanadechachan, Prapun, 149
- Abou-Zeid, Mohamed Nagib**  
*see* Khedr, Safwan A., 1262
- Abraham, Dulcy M.**  
*see* Baik, Hyeon-Shik, 1802  
*see* Garcia, Camilo, 339  
*see* Jeong, Hyung Seok, 283  
*see* Llenin, José A., 1388
- Abruzzo, John**  
 Study of Mitigation Strategies for Progressive Collapse of a Reinforced Concrete Commercial Building, 1404
- Abudayyeh, Osama, P.E.**  
 Research Publication Trends and Topics in *Computing in Civil Engineering*, 246
- Abuel-Naga, H. M.**  
 Experimental Evaluation of Engineering Behavior of Soft Bangkok Clay under Elevated Temperature, 862
- Accord, N. B.**  
 Use of Fiber-Reinforced Polymer Composite Elements to Enhance Structural Steel Member Ductility, 223
- Achari, G.**  
*see* Xu, P., 1941
- Acharya, C.**  
 Operational Optimization and Mass Balances in a Two-Stage MBR Treating High Strength Pet Food Wastewater, 691
- Acharya, Nirmal Kumar**  
 Design Errors: Inefficiency or Carelessness of Designer?, 1383
- Acosta, Hector A.**  
*see* Edil, Tuncer B., 1291
- Adam, Chris**  
*see* Newson, Tim, 792
- Adam, Michael**  
 Evaluating Ozone as a Remedial Treatment for Removing RDX from Unsaturated Soils, 763
- Adams, Barry J.**  
*see* Behera, Pradeep K., 1801  
*see* Chen, Jieyun, 734  
*see* Chen, Jieyun, 1112
- Adams, Dave K.**  
 Performance of Structures before and during Failure, 1972
- Adams, Ellen**  
*see* Hearn, George, 1608
- Adams, Tiffany**  
*see* Filz, George M., 4

**Adeli, Hojjat**

*see* Ghosh-Dastidar, Samanwoy, 1697

**Adler, D. H.**

*see* Teskey, W. F., 1653

**Agar, Emine**

*see* Goktepe, A. Burak, 287

**Agarwal, Pradeep Kumar**

Simple Model for Structural Evaluation of Asphalt Concrete Pavements at the Network Level, 1141

**Agbulos, Albert**

Application of Lean Concepts and Simulation Analysis to Improve Efficiency of Drainage Operations Maintenance Crews, 317

**Aggour, M. Sherif**

Degradation of Sands due to Combined Sinusoidal Loading, 930

**Agletti, G. S.**

*see* Schwingshacker, C. W., 74

**Agnew, Elizabeth**

*see* Marjanishvili, Shalva, P.E., 1402

**Ahlfeld, David P.**

*see* Kennedy, Matthew G., 710

*see* Ostendorf, David W., 761

**Ahmad, Iftekhar**

*see* Zhu, Zhenyu, 139

*see* Zhu, Zhenyu, 224

**Ahmad, M. S. S.**

*see* Sinnakaudan, S. K., 983

**Ahmad, Sohrabuddin**

*see* Wadud, Zia, 1470

**Ahn, Chang Hoon**

Microbial Adaptability to Organic Loading Changes in an Enhanced Biological Phosphorus Removal Process, 701

**Ahn, Il-Sang**

Dynamic Ratcheting in Elastoplastic Single-Degree-of-Freedom Systems, 475

**Aibinu, Ajibade Ayodeji**

Construction Delays and Their Causative Factors in Nigeria, 354

**Aicher, Simon**

Fracture Toughness of Wood Fiber Gypsum Panels from Size Effect Law, 507

**Aidoo, John**

Full-Scale Experimental Investigation of Repair of Reinforced Concrete Interstate Bridge using CFRP Materials, 138

*see* Harries, Kent A., 197

**Aiello, M. A.**

Moisture Effects on Elastic and Viscoelastic Properties of CFRP Rebars and Vinyl ester Binder, 1340

**Aisien, F. A.**

Comparative Absorption of Crude Oil from Fresh and Marine Water using Recycled Rubber, 723

**Ajbar, AbdelHamid**

*see* Alhumaizi, Khalid, 649

**Akbulut, Suat**

*see* Pamukcu, Sibel, 824

**Akinci, Burcu**

Modeling and Analyzing the Impact of Technology on Data Capture and Transfer Processes at Construction Sites: A Case Study, 401

**Akkar, S. D.**

*see* Miranda, E., 1523

**Akoumianakis, George**

*see* Tzamali, Eleftheria, 1755

**Akritidis, E.**

*see* Tastani, S. P., 190

**Aksoy, H.**

*see* Kavvas, M. L., 1099

**Aktan, A. Emin**

*see* Catbas, F. Necati, 1607

**Aktan, Haluk, P.E.**

*see* Attanayake, Upul, 156

**Aktas, M.**

Minor Axis Moment-Thrust Response Behavior in Steel I-Shaped Members, 1544

**Al Habib, A.**

*see* El-Mowafy, A., 1640

**Al Mahmoud, Marwan**

*see* Lancelot, Laurent, 582

**Al Marzoqi, Y.**

*see* El-Mowafy, A., 1640

**Alagusundaramoorthy, P.**

Structural Behavior of FRP Composite Bridge Deck Panels, 141

**Alam, Mahbub**

Bioreduction of Hexavalent Chromium in Flow-Through Quartz Sand Columns, 623

**Alampalli, Sreenivas**

Estimating Fatigue Life of Bridge Components Using Measured Strains, 176

*see* Alnahhal, Wael I., 148

*see* Wattanadechachan, Prapun, 149

**Alarcón, A.**

*see* Ramos, G., 240

**Alarcón, Luis F.**

*see* Costa, Dayana B., 1255

*see* Rischmoller, Leonardo, 1243

**Albano, Leonard D., P.E.**

Classroom Assessment and Redesign of an Undergraduate Steel Design Course: A Case Study, 1433

*see* Johann, Matthew A., 1369

**Al-Bargawi, Hassan**

Condition Rating Model for Underground Infrastructure Sustainable Water Mains, 1376

**Albrecht, Pedro**

*see* Lenwari, Akhrawat, 195

**Albright, William H.**

Field Performance of a Compacted Clay Landfill Final Cover at a Humid Site, 906

## AUTHOR INDEX

Alvarado

- Albro, Carl S.  
*see* Lyons, Terrence, 639
- Alcubilla, Roberto Garcia  
Derived Willingness-to-Pay for Household Water Use with Price and Probabilistic Supply, 1845
- Aldea, C.  
*see* Prota, A., 210
- Al-Deek, Haitham M., P.E.  
Computing Travel Time Reliability in Transportation Networks with Multistates and Dependent Link Failures, 282
- Aldemir, Unal  
*see* Alhan, Cenk, 504
- Aldunate, Roberto  
Robust Mobile Ad Hoc Space for Collaboration to Support Disaster Relief Efforts Involving Critical Physical Infrastructure, 247
- Alecsandru, Ciprian  
*see* Ishak, Sherif, 277
- Alexander, M. G.  
*see* Heiyantuduwa, R., 1359
- Al-Gadhib, Ali H.  
*see* Shazali, Mohammed A., 1298
- Al-Ghassani, Ahmed M.  
Prototype System for Knowledge Problem Definition, 340
- Alhan, Cenk  
Optimal Control: Basis for Performance Comparison of Passive and Semiactive Isolation Systems, 504
- Alhumaizi, Khalid  
Optimization of an Unstructured First-Order Kinetics Model of Cyclically Operated Bioreactors, 649
- Al-Hussein, Mohamed  
*see* Agbulos, Albert, 317  
*see* Sharma, Vishal, 409
- Ali, M. S.  
*see* Yu, Daeyoung, 1027
- Ali-Ahmad, Mohamad  
Experimental Investigation and Fracture Analysis of Debonding between Concrete and FRP Sheets, 530
- Alkass, S., P.E.  
*see* Li, J., 406
- Alkass, Sabah T.  
*see* Sadeghpour, Farnaz, 302
- Allan, Andrew  
*see* Soltani, Ali, 1787
- Alleman, J. E.  
*see* Sears, K., 724
- Allen-Munley, Cheryl, P.E.  
Urban Bicycle Route Safety Rating Model Application in Jersey City, New Jersey, 1716
- Allouche, E. N.  
*see* Hong, H. P., 1155
- Allouche, Erez N.  
Holistic Approach for Assessing the Vulnerability of Buried Pipelines to Earthquake Loads, 1923
- Al-Mahaidi, Riadh  
*see* Hii, Adrian K. Y., 221  
*see* Pham, Huy Binh, 193
- Al-Mayah, A.  
Effect of Sleeve Material on Interfacial Contact Behavior of CFRP-Metal Couples, 1358
- Almedeij, Jaber H.  
Approach to Separate Sand from Gravel for Bed-Load Transport Calculations in Streams with Bimodal Sediment, 1051
- Alminar, Sandee  
*see* Mota, Carlos, 206
- Almqvist, Helena  
Organic Hazardous Substances in Graywater from Swedish Households, 700
- Almutairi, Naif B.  
Control of Suspension Bridge Nonlinear Vibrations due to Moving Loads, 500
- Alnahhal, Wael L.  
Temporal Thermal Behavior and Damage Simulations of FRP Deck, 148
- Alonso, Carlos  
*see* Li, Hua, 982
- Alonso, Cristina  
*see* Qi, Shuang, 594
- Al-Qadi, Imad L.  
*see* Diefenderfer, Brian K., 1679  
*see* Elseifi, Mostafa A., 452  
*see* Loulizi, Amara, 1725
- Al-Qadi, Imad L., P.E., ed.  
Airfield and Highway Pavement: Meeting Today's Challenges with Emerging Technologies, 2047
- Alramahi, Bashar A.  
*see* Alshibli, Khalid A., 785
- Al-Ruwaih, Fawzia  
*see* Almedeij, Jaber H., 1051
- Alsaleh, Mustafa I.  
Influence of Micromaterial Heterogeneity on Strain Localization in Granular Materials, 37
- Alshawabkeh, Akram N., P.E.  
Parametric Study of One-Dimensional Solute Transport in Deformable Porous Media, 870
- Alshibli, Khalid, ed.  
*see* Puppala, Anand J., ed., 2087
- Alshibli, Khalid A.  
Microscopic Evaluation of Strain Distribution in Granular Materials during Shear, 785  
*see* Alsaleh, Mustafa I., 37
- Altan-Sakarya, A. Burcu  
*see* Aydin, Ismail, 1029
- Altunkaynak, Abdüsselam  
*see* Uyumaz, Ali, 1038
- Alvarado, Gisel  
*see* Nazarian, Soheil, 1316

- Aly, Ragi**  
Tensile Lap Splicing of Bundled CFRP Reinforcing Bars in Concrete, 217
- Ambrožík, Tomaž**  
*see* Sávišek-Safíč, Simona, 1648
- Amekudzi, Adjo**  
Considering the Environment in Transportation Planning: Review of Emerging Paradigms and Practice in the United States, 1776
- Considering the Environment in Transportation Planning: Review of Emerging Paradigms and Practice in the United States, 1777
- Amekudzi, Adjo A.**  
*see* Jeon, Christy Mihyeon, 1793
- Ames, Daniel P.**  
Estimating 7Q10 Confidence Limits from Data: A Bootstrap Approach, 1821
- Amin, A. F. M. S.**  
Hyperelasticity Model for Finite-Element Analysis of Natural and High Damping Rubbers in Compression and Shear, 440
- Amin, Md N.**  
*see* Barr, P. J., 1365
- Amin, MD. N.**  
*see* Barr, P. J., 124
- Amirkhanian, Serji N.**  
*see* Kim, Kwang W., 1324
- Amrhein, Christopher**  
*see* Yu, Xueyuan, 749
- Amstutz, David E.**  
*see* Samuels, William B., 970
- Amy, Gary L.**  
*see* Drewes, Jörg E., 748
- An, Hyunhee**  
Evaluation of Programs for Regulating Withdrawal of Surface Water under the Riparian Legal System, 1841
- Anami, Kengo**  
*see* Sause, Richard, 1543
- Anand, Gunwant Singh**  
Dissolution of Wollastonite in a Packed Bed Contactor, 634
- Ancev, Tihomir**  
Economic Analysis of an Irrigation System for Liquid Manure Application, 1208
- Ancilich, Eric J.**  
Dynamic Anomalies in a Modular Bridge Expansion Joint, 157
- Andersen, Knut H.**  
*see* Randolph, Mark F., 53
- Anderson, James C.**  
*see* Kargahi, Mohsen, 1622  
*see* Kargahi, Mohsen, 1623
- Anderson, Lee L., Jr., P.E.**  
Anatomy of a Successful Partnering Program on a Megaproject, 1915
- Anderson, M. L.**  
*see* Kavvas, M. L., 1099
- Anderson, Michael D.**  
Development of a Methodology to Predict Through-Trip Rates for Small Communities, 1784
- Anderson, Stuart D.**  
*see* Oyetunji, Adetokunbo A., 288
- Anderson-Cook, Christine M.**  
*see* Lucko, Gunnar, 359
- Andreatta, A.**  
*see* Martin-Vide, J. P., 1052
- Andreu, Joaquín**  
*see* Pulido-Velázquez, Manuel, 1848
- Ang, Wah Khim**  
Solution for Water Distribution Systems under Pressure-Deficient Conditions, 1818
- Anishevich, A. N.**  
*see* Aiello, M. A., 1340
- Anohin, Vadim V.**  
Effect of Long Internal Waves on the Quality of Water Withdrawn from a Stratified Reservoir, 1047
- Anotai, J.**  
*see* Lu, M.-C., 1965
- Antonaci, Paola**  
Long Mechanical Interaction between Strengthening Materials and Preexisting Structures, 1334
- Anumandla, Vijay**  
*see* Wu, Hwai-Chung, 147
- Anumba, Chimay J.**  
*see* Al-Ghassani, Ahmed M., 340  
*see* Owolabi, Abidemi, 257
- Anwar, Arif A.**  
*see* de Vries, Tonny T., 1188
- Anzani, A.**  
*see* Garavaglia, E., 1361
- Apeland, Kristoffer**  
*see* Meløyund, Vivian, 1618
- Apostolakis, George E.**  
*see* Michaud, David, 1160
- Arain, Faisal Manzoor**  
Contractors' Views of the Potential Causes of Inconsistencies between Design and Construction in Saudi Arabia, 1372
- Aral, Mustafa M.**  
*see* Guan, Jiabao, 1827
- Arbocz, Johann**  
*see* Goldfeld, Yiska, 575
- Archilla, Adrian Ricardo**  
Repeated Measurement Data Analysis in Pavement Deterioration Modeling, 1153
- Use of Superpave Gyroratory Compaction Data for Rutting Prediction, 1744
- Arciszewski, Tomasz**  
Civil Engineering Crisis, 1907  
*see* Skolicki, Zbigniew, 1822

## AUTHOR INDEX

Aydilek

- Arditi, David**  
*see* Doğ, Sevgi Zeynep, 396
- see Lee, Dong-Eun, 292**
- see Lee, Dong-Eun, 315**
- see Poku, Stephen E., 285**
- Aref, Amjad J.**  
*see* Alnahhal, Wael I., 148
- Areias, Pedro M. A.**  
Analysis of Finite Strain Anisotropic Elastoplastic Fracture in Thin Plates and Shells, 81
- Argyros, Antonis**  
*see* Tzamali, Eleftheria, 1755
- Ariaratnam, Samuel T.**  
Legal Consequences of Damages to Underground Facilities by Horizontal Directional Drilling, 1437
- Utilization of Trenchless Construction Methods in Mainland China to Sustain Urban Infrastructure, 1984
- Arif, Mohammed**  
*see* Mullens, Michael A., P.E., 366
- Arnold, Robert G.**  
*see* Miller, Jennifer H., 732
- Arnold, William A., P.E.**  
*see* Shimotori, Tsutomu, 690
- Arockiasamy, Madasamy**  
Full-Scale Field Tests on Flexible Pipes under Live Load Application, 1366
- Arora, Jasbir S.**  
*see* Wang, Qian, 1624
- Arroyo, Marcos**  
Microstructure and Compactive Instabilities of a Stabilized Residue, 1290
- Arroyo-Caraballo, José R.**  
Glancing-Blow Impact Forces by a Barge Train on a Lock Approach Wall, 1150
- Arvizu-Valverde, Jaime**  
*see* Palau-Salvador, Guillermo, 1224
- ASCE**  
Automated People Mover Standards — Part 1 (ASCE 21-05), 2051
- Design of Steel Transmission Pole Structures (ASCE/SEI 48-05), 2058
- Guidelines for Cloud Seeding to Augment Precipitation, 2073
- Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-05 (CD-ROM), 2076
- Transactions of the American Society of Civil Engineers 2005, 2094
- ASCE Committee on Diversity and Women in Civil Engineering**  
Summary Report: Leading the Way as Full Diversity Partners — A Senior Executive Workshop on Critical Skills for Courageous Leaders, 1905
- Aschheim, M.**  
*see* Tjhin, T., 1485
- Ashford, Scott A.**  
Soil-Pile Response to Blast-Induced Lateral Spreading. I: Field Test, 793
- Bozorgzadeh, Azadeh, 158**  
*see* Juinarongrit, Teerawut, 794
- Ashok, B.**  
*see* Kumar, D. Nagesh, 1178
- Asp, Paul, P.E.**  
Counterpoint, 2003
- Asquith, William H.**  
*see* Cleveland, Theodore G., 1218
- Assaad, J. J.**  
Effect of Mixture Consistency on Formwork Pressure Exerted by Highly Flowable Concrete, 1353
- Assaf, Sadi A.**  
*see* Arain, Faisal Manzoor, 1372
- Assoc. Prof.**  
*see* Sukumaran, Praveen, 1733
- Atahan, Ali O.**  
Finite-Element Crash Test Simulation of New York Portable Concrete Barrier with I-Shaped Connector, 1481
- Atale-Ashiani, B.**  
Experimental Investigation of Clear-Water Local Scour at Pile Groups, 1042
- Atalah, Alan, P.E.**  
Improving Enrollment in the Master of Construction Management Program at Bowling Green State University, 1434
- Pipelines 2006 — Service to the Owner, 2080
- Safe Distance between Large-Diameter Rock Pipe Bursting and Nearby Buildings and Buried Structures, 1699
- Atimtay, Ergin, P.E.**  
Learning Seismic Design from the Earthquake Itself, 1986
- Atiquzzaman, Md.**  
Alternative Decision Making in Water Distribution Network with NSGA-II, 1813
- Attal, Mikael**  
New Facility to Study River Abrasion Processes, 994
- Attanayake, Upul**  
Penetrating Sealants for Concrete Bridge Decks — Selection Procedure, 156
- Au, Ching**  
Peel and Shear Fracture Characterization of Debonding in FRP Plated Concrete Affected by Moisture, 192
- Aubeny, C. P.**  
Interpretation of Impact Penetration Measurements in Soft Clays, 848
- Aubertin, M.**  
*see* Mbomimpala, M., 881
- Audic, Jean-Marc**  
*see* Rivero, Jesús A. Cacho, 670
- Aulenta, Federico**  
*see* Louarn, Essylt, 705
- Austeng, Kjell**  
*see* Lædre, Ola, 356
- Aydilek, Ahmet H.**  
Constriction Size of Geotextile Filters, 2

- Field Evaluation of a Leachate Collection System Constructed with Scrap Tires, 869  
*see* Kutay, M. Emin, 777
- Aydin, Ismail  
 Performance of Slit Weir, 1029
- Ayoub, Ashraf  
 Nonlinear Analysis of Reinforced Concrete Beam—Columns with Bond-Slip, 559
- Ayuga, F.  
*see* Vidal, P., 542
- Azam, Mir Hammadul  
 3D Model Application to Study Residual Flow in the Arabian Gulf, 1891
- Three-Dimensional Modeling of the Ruwais Coastal Area of United Arab Emirates, 1902  
*see* Elshorbagy, Walid, 1859
- Azevedo, Álvaro F. M.  
*see* Sena Cruz, José M., 218
- Azevedo, Roberto F.  
*see* Melo, André L. O., 1652
- Aziz, Ahmed M. Abdell  
 Generalized Economic Modeling for Infrastructure and Capital Investment Projects, 1139
- Azkune, M.  
*see* Puent, I., 242
- Azzam, Diya  
 Fatigue Behavior of Welded Aluminum Light Pole Support Details, 1628
- Residual Stress Measurement of Welded Aluminum Light Pole Supports, 1597
- Babbar, Meghna  
 Groundwater Remediation Design using Multiscale Genetic Algorithms, 1837
- Babcock, Roger, Jr.  
 Use of Boron as a Tracer for Recycled Water in Brackish Aquifers, 696
- Babiker, T.  
*see* El-Mowafy, A., 1640
- Babu, B. Maheswara  
*see* Mishra, P. K., 1196
- Babu, G. L. Sivakumar  
 Reliability Analysis of Deflection of Buried Flexible Pipes, 1754
- Babu, P. Suresh  
*see* Jain, M. K., 1136
- Baccouch, M.  
 Selection of Physical and Geometrical Properties for the Confinement of Vibrations in Nonhomogeneous Beams, 72
- Bachman, Brenda  
*see* Lyons, Terrence, 639
- Baddour, R. E.  
 Entrainment Properties of Plane Surface-Jets in Shallow Current, 967
- Bae, Sang-Wook  
 Bearing Strength of Slabs on Grade Supporting a Cold-Formed Steel Wall in Low-Rise Building, 87
- Bae, Sunyoung  
 Confirmation of Aqueous Polymer Sorption on Contaminant Barrier Clay using TGA, 1293
- Baek, Kyong Oh  
 Evaluation of Dispersion Coefficients in Meandering Channels from Transient Tracer Tests, 1033
- Bagchi, Rajesh  
*see* Lei, Li, 626
- Bahadur, Rakesh  
*see* Samuels, William B., 970
- Bahuguna, Saurabh  
 Identification and Modeling of Permanent Deformations of Asphalt Concrete, 458
- Bai, K. J.  
*see* Kim, J. W., 1886
- Bai, Xuequn  
*see* Tandon, Vivek, 1314
- Bai, Yong  
 Rapid Bridge Replacement: Processes, Techniques, and Needs for Improvements, 400
- Bai, Yong, P.E.  
 Lessons Learned from an Emergency Bridge Replacement Project, 321
- Rapid Bridge Replacement under Emergency Situation: Case Study, 130
- Baidya, D. K.  
 Investigation of Foundation Vibrations Resting on a Layered Soil System, 789
- Baik, Hyeon-Shik  
 Estimating Transition Probabilities in Markov Chain-Based Deterioration Models for Management of Wastewater Systems, 1802
- Baise, Laurie G.  
 Liquefaction Hazard Mapping—Statistical and Spatial Characterization of Susceptible Units, 844  
*see* DeGroot, Don J., ed., 2068
- Bakar, M. N. A.  
*see* Othman, M. Y., 433  
*see* Othman, M. Y., 434
- Baker, Donald L.  
 General Validity of Conductivity Means in Unsaturated Flow Models, 1125
- Baker, William F.  
*see* Kijewski-Correa, Tracy, 1588
- Bakht, Baidar  
*see* Hay, Shaun, 237
- Bakker, M. C. M.  
 Shear-Flexural Buckling of Cantilever Columns under Uniformly Distributed Load, 557
- Balachandar, Ram  
*see* Farouque, M. A. A., 989
- Balaguru, P.  
*see* Toutanji, Houssam, 1264
- Balaguru, P. N.  
*see* Giancaspro, James, 1303

## AUTHOR INDEX

Bathurst

- Balakrishnan, A. V.  
Modeling Response of Flexible High-Aspect-Ratio Wings to Wind Turbulence, 70
- Nonlinear Aeroelasticity: Continuum Theory, Flutter/Divergence Speed, and Plate Wing Model, 76
- Balakrishnan, K.  
*see* Sivacoumar, R., 628
- Bali, Khaled M.  
*see* Ventura, Francesca, 1181
- Balint, Gabor  
*see* Szilagyi, Jozsef, 1097
- Ball, James E.  
*see* Maghrebi, Mahmoud F., 1035
- Balling, Richard J.  
Multiple Optimum Size/Shape/Topology Designs for Skeletal Structures using a Genetic Algorithm, 1552
- Baluch, Mohammed H.  
*see* Shazali, Mohammed A., 1298
- Bambach, M. R.  
Design Provisions for Sections Containing Unstiffened Elements with Stress Gradient, 8
- Bandyopadhyay, J. N.  
*see* Singha, Maloy K., 548
- Banerjee, D.  
Material Flow-Based Facility Layout Analysis of a Manufactured Housing Production Plant, 103
- Banerjee, J. R.  
Free Transverse and Lateral Vibration of Beams with Torsional Coupling, 59
- Banik, Gouranga C., P.E.  
Emerging Legal Risks for Construction Management Professionals, 1914
- Bank, Lawrence C.  
Double-Layer Prefabricated FRP Grids for Rapid Bridge Deck Construction: Case Study, 208
- Banthia, N.  
*see* Vindiganavile, V., 1315
- Bapat, J. D.  
Ecofriendly Concrete with High Volume of Lagoon Ash, 1310
- Baradan, Selim  
Comparative Injury and Fatality Risk Analysis of Building Trades, 342
- Baranowski, T. M.  
Consequence Management Optimization for Contaminant Detection and Isolation, 1829
- Barbieri, Ranier Adonis  
Numerical Model for the Analysis of Unbonded Pre-stressed Members, 1442
- Barecchia, Enrico  
*see* Corte, Gaetano Della, 1337
- Barelli, Michael  
History and Aesthetics of the Bronx-Whitestone Bridge, 127
- Barkan, Christopher P. L.  
*see* Grimes, George Avery, P.E., 1729
- Barkdoll, Brian  
*see* Duan, Jennifer G., 1032
- see* Melville, Bruce, 956
- see* Melville, Bruce, 988
- Barkdoll, Brian D.  
*see* Li, Hua, 982
- Barker, J. E.  
Physico-Chemical Changes in Clay Caused by Ion Migration from Lime Piles, 1281
- Barker, M.  
*see* Salim, H. A., 225
- Barnard, J. L.  
*see* Sears, K., 724
- Barnes, Richard  
Performance in Fire of Small-Scale CFRP Strengthened Concrete Beams, 239
- Baron, Kurtis S.  
*see* Hu, Henry H., 1080
- Barr, P. J.  
Long-Term Structural Health Monitoring of the San Ysidro Bridge, 1365
- Shear Live-Load Distribution Factors for I-Girder Bridges, 124
- Barr, Paul J.  
*see* Hsieh, Kai H., 174
- Barrett, Christopher S.  
*see* Epstein, Howard I., 1983
- Barros, Joaquim A. O.  
*see* Sena Cruz, José M., 218
- Bartelt-Hunt, S. L.  
*see* Burns, S. E., 907
- Bartelt-Hunt, Shannon L.  
Optimal Design of a Compacted Soil Liner Containing Sorptive Amendments, 686
- Barthelmie, R. J.  
Challenges in Predicting Power Output from Offshore Wind Farms, 430
- Bartlett, F. Michael  
*see* MacDougall, Colin, 576
- Bartlett, Justin  
*see* Kish, Suzanne M., 739
- Bashor, Rachel  
*see* Kijewski-Correa, Tracy, 1588
- Baskaran, A.  
New Design Procedure for Wind Uplift Resistance of Architectural Metal Roofing Systems, 100
- Bassi, A.  
*see* Acharya, C., 691
- Bast, William D., P.E.  
*see* Lakota, Gregory J., P.E., 2037
- Basu, B.  
*see* Salem, O., 1980
- Bathurst, Richard J.  
*see* Hatami, Kianoosh, 841
- see* Rowe, R. Kerry, 920

- Batiuk, Richard  
*see* Wang, Ping, 625
- Battjes, Jurjen A.  
*see* Hofland, Bas, 1050
- Baugh, John W., Jr.  
*see* Kumar, Sujay V., 1840
- Baume, J.-P.  
*see* Litrico, X., 1205
- Bautista, E.  
 Salt River Project Canal Automation Pilot Project: Simulation Tests, 1180
- Baxter, Anthony J.  
*see* Setareh, Mehdi, 1371
- Baxter, C. D. P.  
*see* Bradshaw, A. S., 1895
- Baxter, Christopher D. P.  
*see* Wang, Jian-Hua, 924
- Baykal, Orhan  
*see* Ceyla, Ayhan, 1657
- Bayo, E.  
*see* Hernández-Montes, E., 1535
- Bayraktar, Mehmet Emre  
*see* Sukumaran, Praveen, 1717
- Bayraktar, Mehmet Emre  
*see* Sukumaran, Praveen, 1733
- Bayram, Atilla  
*see* Camenen, Benoit, 1048
- Bazán, Enrique  
*see* Jarenprasert, Sittipong, 1565
- Bažant, Zdeněk P.  
 Reliability, Brittleness, Covert Understrength Factors, and Fringe Formulas in Concrete Design Codes, 1439
- Size Effect on Strength of Quasi-Brittle Structures with Reentrant Corners Symmetrically Loaded in Tension, 558
- Bea, Robert, P.E.  
 Reliability and Human Factors in Geotechnical Engineering, 836
- Beaven, R. P.  
*see* Cox, S. E., 859
- Beavers, J. E., P.E.  
 Crane-Related Fatalities in the Construction Industry, 377
- Beck, Dwayne L.  
*see* DeBoer, Darrell W., P.E., 1169
- Beck, James L.  
*see* Ching, Jianye, 474
- Bédard, Claude  
*see* Mora, Rodrigo, 253
- Begbie, Howard, P.E.  
*see* Flavell, Eric L., P.E., 1918
- Begnudelli, Lorenzo  
 Unstructured Grid Finite-Volume Algorithm for Shallow-Water Flow and Scalar Transport with Wetting and Drying, 968
- see* Valiani, Alessandro, 997
- Beheiry, Salwa M. A.  
 Examining the Business Impact of Owner Commitment to Sustainability, 326
- Behera, Pradeep K.  
 Runoff Quality Analysis of Urban Catchments with Analytical Probabilistic Models, 1801
- Beheshti, A. A.  
*see* Ataei-Ashtiani, B., 1042
- Behr, Richard A., P.E.  
 Design of Architectural Glazing to Resist Earthquakes, 96
- Beirami, M. K.  
 Hydraulic Jumps in Sloping Channels: Sequent Depth Ratio, 1037
- Belarbi, Abdeldjelil  
*see* Turcet, Philippe, 1266
- Belarbi, Abdeldjelil, P.E.  
*see* Bae, Sang-Wook, 87
- Bell, Erin Santini  
*see* Sanayei, Masoud, 172
- Bell, Glenn R.  
*see* Zimmer, Alec S., P.E., 2039
- Bell, Lansford C.  
*see* Skipper, Charles O., 1245
- Bell, Lansford C., P.E.  
*see* Skipper, Charles O., P.E., 1246
- Bella, David A.  
 Organizational Distortions and Failures: A Method to Expose Them, 1408
- Bellotti, Giorgio  
*see* Panizzo, Andrea, 1872
- Belovich, Joanne M.  
*see* Bolton, James, 745
- Beltaos, Spyros  
 Formation of Breakup Ice Jams at Bridges, 1056
- Belytschko, Ted  
*see* Areias, Pedro M. A., 81
- Benaroya, H.  
*see* Ruess, F., 71
- Benmokrane, Brahim  
 Designing and Testing of Concrete Bridge Decks Reinforced with Glass FRP Bars, 126
- see* Aly, Ragi, 217
- see* Debaiky, Ahmed S., 226
- see* Zhang, Burong, 29
- Bennethum, Lynn S.  
 Compressibility Moduli for Porous Materials Incorporating Volume Fraction, 562
- Bennett, J. E.  
*see* Podgorneny, R. K., 804

## AUTHOR INDEX

Bilec

- Bennett, Richard M.  
*see* Zurieck, Abdul-Hamid, 1569
- Benson, Craig H.  
*see* Edil, Tuncer B., 1291
- Benson, Craig H., P.E.  
*see* Albright, William H., 906
- Bentler, Joseph G.  
Performance of a Cantilever Retaining Wall, 875
- Béranger, Sandra C.  
Isotopic Fractionation of Tetrachloroethene Undergoing Biodegradation Supported by Endogenous Decay, 681
- Berawi, A. R.  
*see* Abdul-Rahman, H., 300
- Berawi, M. A.  
*see* Abdul-Rahman, H., 300
- Berber, Mustafa  
Robustness Analysis of Two-Dimensional Networks, 1664
- Berechman, J.  
*see* Ozbay, K., 1703
- Bergado, D. T.  
*see* Abuel-Naga, H. M., 862
- Bergado, Dennes T.  
*see* Lorenzo, Glen A., 1279
- Bergant, Anton  
*see* Vítovský, John, 1001  
*see* Vítovský, John P., 1000
- Berger, R. C.  
*see* Tate, Jennifer N., 1015
- Bergin, M.  
*see* Kumara, M. W., 1749
- Berglund, Evan M.  
Girder Differential Deflection and Distortion-Induced Fatigue in Skewed Steel Bridges, 121
- Bergstrom, Donald E.  
*see* Blatchley, Ernest R., III, 742
- Berli, Markus  
Deformation of Pores in Viscoplastic Soil Material, 22
- Bernal, Sionisio  
Flexibility-Based Damage Localization from Stochastic Realization Results, 499
- Bernard, Erik Stefan  
Influence of Toughness on the Apparent Cracking Load of Fiber-Reinforced Concrete Slabs, 1634
- Bernold, Leonhard E.  
*see* Kötter, Bopanna T., 379  
*see* Nuntasunti, Suchart, 388
- Berrens, Robert P.  
*see* Weber, Matthew A., 1806
- Berry, Jonathan  
Sensor Placement in Municipal Water Networks with Temporal Integer Programming Models, 1823
- Berryman, James G.  
Effective Medium Theories for Multicomponent Porelastic Composites, 486
- Berthouex, P. M.  
*see* Chen, Shyi-Tien, 689
- Beyene, Asfaw  
Parameter Variation and Part-Load Efficiencies of Wave Energy Conversion, 421
- Bhadauria, Sudhir Singh  
In-Service Durability Performance of Water Tanks, 1377
- Bhalla mudi, S. Murty  
*see* Yandamuri, S. R. Murty, 1814
- Bhardwaj, M. K.  
Semiactive Fuzzy Control of the Seismic Response of Building Frames, 1519
- Bhasin, Amit  
*see* Hefer, Arno W., 1350
- Bhatt, G.  
*see* Jha, Madan K., 1135
- Bhattacharjya, Rajib Kumar  
Optimal Design of Open Channel Section Incorporating Critical Flow Condition, 1223
- Bhattacharyya, Debraj  
*see* Singh, Kripa Shankar, 699
- Bhatti, T. S.  
*see* Singh, Shikha, 420
- Bhide, Kedar M.  
*see* Burgueño, Rigoberto, 1533
- Bhuiyan, A. R.  
*see* Amin, A. F. M. S., 440
- Bhunya, P. K.  
*see* Jain, Sharad K., 1134
- Bian, Shaofeng  
Solving an Inverse Problem of a Meridian Arc in Terms of Computer Algebra System, 1641
- Biegler, Lorenz T.  
*see* Laird, Carl D., 1826
- Bielak, Jacobo  
*see* Jarenpraser, Sittipong, 1565
- Bielefeldt, Angela R.  
*see* Cort, Todd L., 595
- Bierawski, Lechoslaw G.  
DEM-FEM Model of Highly Saturated Soil Motion Due to Seepage Force, 1892
- Biesadecki, Gregory L., P.E.  
*see* Ciancia, Andrew J., P.E., 1985
- Bigger, Stephen W.  
*see* Dao, Hien V., 661
- Bijlaard, Frans S. K.  
*see* Coelho, Ana M. Girá, 1530
- Bilec, Melissa  
Example of a Hybrid Life-Cycle Assessment of Construction Processes, 1158

- Billington, David P.**  
*see* Barelli, Michael, 127
- Bilyeu, John**  
*see* Chen, Dar-Hao, 1140
- Bilyeu, John, P.E.**  
*see* Chen, Dar Hao, 1690
- Bin, Okmyung**  
 Real Estate Market Response to Coastal Flood Hazards, 1936
- Binda, L.**  
*see* Garavaglia, E., 1361
- Bingeman, A. K.**  
 Validation of the Hydrological Processes in a Hydrological Model, 1117
- Binenda, Wieslaw K., ed.**  
*see* Malla, Ramesh B., ed., 2061
- Biondini, Fabio**  
 Probabilistic Service Life Assessment and Maintenance Planning of Concrete Structures, 1521
- Birgonul, M. Talat**  
*see* Ozorhon, Beliz, 381
- Birkelund, Vibke**  
*see* Lai, Keith C. K., 605
- Birman, Victor**  
 Functionally Graded Stitched Laminates: Illustration on the Example of a Double Cantilever Beam, 78
- Birriel, Elizabeth**  
*see* Yan, Xuedong, 1738
- Bisadi, V.**  
*see* Maleki, S., 116
- Bishop, Daniel**  
*see* Huang, Wenxiong, 45
- Bishop, Paul L., P.E.**  
*see* Kuperle, Margaret J., P.E., 656
- Biswas, G.**  
*see* Srinivas, Y., 468
- Black, Jessica**  
 Increasing Stormwater Outfall Duration, Magnitude, and Volume through Combined Sewer Separation, 1119
- Blais, J. F.**  
*see* Brar, Satinder K., 1946
- Blais, Jean-François**  
*see* Levasseur, Béatrice, 654
- Blais, Neil**  
*see* Scawthorn, Charles, 1928
- Blatchley, Ernest R., III**  
 Dyed Microspheres for Quantification of UV Dose Distributions: Photocatalytic Reactor Characterization by Lagrangian Actinometry, 742
- Bleckmann, Charles**  
*see* Staudinger, Tiffany J., 1146
- Bloniarz, David**  
*see* Matteo, Michelle, 1815
- Bloom, Michael**  
*see* Suarez, Monica P., 770
- Bloomquist, David**  
*see* Hu, Zhihong, 820
- Boardman, D. L.**  
*see* Barker, J. E., 1281
- Bob, Mustafa**  
 Lime-Soda Softening Process Modifications for Enhanced NOM Removal, 600
- Bobbio, Stephen M.**  
*see* Chaffin, John H., 431
- Bocca, Pietro**  
*see* Antonaci, Paola, 1334
- Bodge, Kevin R., P.E.**  
 Alternative Computation of Dean's Overfill Ratio, 1868
- Bodiford, Melanie P.**  
 Moondust and More, 2011
- Bohrerova, Zuzana**  
 Comparative Inactivation of *Bacillus Subtilis* Spores and MS-2 Coliphage in a UV Reactor: Implications for Validation, 760
- Boillat, Jean-Louis**  
*see* De Cesare, Giovanni, 754
- Boll, Jan**  
*see* Brooks, Erin S., 1113
- Bollaert, Erik**  
*see* Manso, Pedro A., 3
- Bollaert, Erik F. R.**  
 Physically Based Model for Evaluation of Rock Scour due to High-Velocity Jet Impact, 5
- Bolt, B. A.**  
*see* Sasani, M., 522
- Bolton, James**  
 Procedure to Quantify Biofilm Activity on Carriers used in Wastewater Treatment Systems, 745
- Bolton, M. D.**  
*see* de Groot, M. B., 1877
- Boltz, Joshua P.**  
 The Role of Bioflocculation on Suspended Solids and Particulate COD Removal in the Trickling Filter Process, 655
- Bolzon, Gabriella**  
*see* Puntel, Eric, 556
- Bondi, Robert W.E., P.E.**  
*see* Tiberio, Terrence J., P.E., 2026

## AUTHOR INDEX

Brandes

- Bonfield, Peter  
*see* Fan, Mizi, 518
- Bonjean, D.  
*see* Foray, P., 1882
- Bonnet, G.  
*see* Msaad, Y., 552
- Bontempi, Franco  
*see* Biondini, Fabio, 1521
- Booker, James F.  
Can Reservoir Storage Be Uneconomically Large?, 1854  
*see* Ward, Frank A., 1851
- Boonyasirikul, Thana  
*see* Tingsanchali, Tawatchai, 1812
- Borchering, John D.  
*see* Srour, Issam M., 392
- Borden, Robert C., P.E.  
*see* Coulibaly, Kapo M., 1095  
*see* Jung, Yong, 1096
- Boreel, Gerard L.  
*see* Hesseslink, Annika W., 945
- Borguet, Eric  
*see* Feng, Wenguo, 615
- Boriboonsomsin, Kanok  
Simplified Methodology to Estimate Emissions from Mobile Sources for Ambient Air Quality Assessment, 1753
- Bose, Gaurav  
*see* Rao, N. N., 624
- Bose, Purnendu  
*see* Lavanja, Amit, 712
- Bosela, Paul A., ed.  
Forensic Engineering (2006), 2066
- Bouazza, Abdelmalek  
Effect of Wet — Dry Cycles and Cation Exchange on Gas Permeability of Geosynthetic Clay Liners, 871
- Bouchart, F. J.-C.  
*see* Davidson, J. W., 942
- Boufaadel, Michel C.  
Tracer Studies in Laboratory Beach Simulating Tidal Influences, 668
- see* Kaku, Vikram J., 593
- Boulanger, Ross W.  
Liquefaction Susceptibility Criteria for Silts and Clays, 908  
*see* Kulasingam, R., 7
- see* Malwick, Erik J., 897
- Boult, Peter J.  
*see* Camac, Bronwyn A., 52
- Bourdariot, Eric  
*see* Poyet, Stéphane, 1328
- Bourgeois, F.  
*see* Shao, J. F., 23
- Bousmar, D.  
*see* Proust, S., 1026
- Bouwer, Edward J.  
*see* Hwang, Sangchul, 610
- Bower, Kevin C., P.E.  
*see* Hassan, Kazi Z. A., 767
- Bowman, Andrew L.  
*see* Allouche, Erez N., 1923
- Bowman, Mark D.  
*see* Chotickai, Piya, 111  
*see* Chotickai, Piya, 169
- Boyd, Andrew J.  
*see* Minchin, R. Edward, Jr., 1258
- Boyd, Stephen A.  
*see* Gellner, W. James, II, 773
- Bozorgzadeh, Azadeh  
Capacity Evaluation of Exterior Sacrificial Shear Keys of Bridge Abutments, 158
- Bracci, Joseph M.  
*see* Ramamoorthy, Sathish K., 1593
- Bracher, M.  
*see* Papagiannakis, A. T., P.E., 1759
- Brachman, R. W. I.  
*see* Gudina, S., 902
- Braden, John B.  
*see* Johnston, Douglas M., 1804
- Bradford, Mark A.  
*see* Wang, Tao, 1601
- Bradford, Mark Andrew  
*see* Pi, Yong-Lin, 1515  
*see* Pi, Yong-Lin, 1516
- Bradford, Scott F.  
*see* Sanders, Brett F., 443
- Bradshaw, A. S.  
Simple Dynamic Model for Fender Pile Analysis and Design, 1895
- Brady, M. J.  
*see* Eisinger, D. S., 1756
- Brady, Sean P.  
Effect of Vehicle Velocity on the Dynamic Amplification of a Vehicle Crossing a Simply Supported Bridge, 128
- Effect of Vehicle Velocity on the Dynamic Amplification of Two Vehicles Crossing a Simply Supported Bridge, 129
- Braga, Franco  
Analytical Stress — Strain Relationships for Concrete Confined by Steel Stirrups and/or FRP Jackets, 1577
- Branco, Fernando António Baptista Branco  
*see* Correia, João Pedro Ramôa Ribeiro, 131
- Brandenburg, Stefanie G.  
Strategic Management of Human Resources in Construction, 1248
- Brandes, Horst G.  
Correlation of Aggregate Test Parameters to Hot Mix Asphalt Pavement Performance in Hawaii, 1672

- Brandimarte, Luigia**  
Stochastic Flow Analysis for Predicting River Scour of Cohesive Soils, 980
- Brandon, Thomas L.**  
Drained and Undrained Strength Interpretation for Low-Plasticity Silts, 802
- Brankman, Charles M.**  
*see* Baise, Laurie G., 844
- Brar, S. K.**  
*see* Verma, M., 1969
- Brar, Satinder K.**  
Bioremediation of Hazardous Wastes — A Review, 1946
- Bray, Jonathan D.**  
Assessment of the Liquefaction Susceptibility of Fine-Grained Soils, 885
- see* Rodriguez-Marek, Adrian, 928
- see* Zekkos, Dimitrios, 893
- Brenkert-Smith, Hannah**  
The Pace of Fire, 1932
- Brennan, Linda L.**  
Operations Management for Engineering Consulting Firms: A Case Study, 1249
- Brennan, Rachel A.**  
Biodegradation of Tetrachloroethene by Chitin Fermentation Products in a Continuous Flow Column System, 673
- Brenner, Brian, P.E.**  
Don't Throw This Away!: The Civil Engineering Life, 2060
- Breul, Pierre**  
In Field Soil Characterization: Approach Based on Texture Image Analysis, 787
- Brezonik, Patrick L.**  
*see* Rockne, Karl J., 633
- Briaud, Jean-Louis**  
BCD: A Soil Modulus Device for Compaction Control, 788
- see* Brandimarte, Luigia, 980
- Briggs, Ryan R.**  
*see* Balling, Richard J., 1552
- Brilakis, Ioannis**  
Multimodal Image Retrieval from Construction Databases and Model-Based Systems, 365
- Brill, E. Downey**  
*see* Kumar, Sujay V., 1840
- Brissette, François P.**  
*see* Lavallée, Stéphane, 1808
- Bristow, Elizabeth C.**  
Delay between Sensing and Response in Water Contamination Events, 1145
- Bröchner, J.**  
*see* Waara, F., 367
- Brodetskaia, I.**  
*see* Sacks, R., 256
- Brody, Samuel D.**  
*see* Highfield, Wesley E., 1934
- Brooks, Erin S.**  
Global Positioning System/GIS-Based Approach for Modeling Erosion from Large Road Networks, 1113
- Brooks, Michael C.**  
*see* Hwang, Sangchul, 610
- Brown, Andrea J.**  
*see* Béranger, Sandra C., 681
- Brown, Casey**  
Effect of Forecast-Based Pricing on Irrigated Agriculture: A Simulation, 1843
- Brown, David L.**  
*see* Catbas, F. Necati, 1607
- Brown, Hyman**  
*see* Chinowsky, Paul S., 1416
- Brown, Jeff L.**  
Turnpike Transformation, 2038
- Brown, Jim**  
*see* Shimada, Masashi, 961
- Brown, Stephen C.**  
*see* Ancich, Eric J., 157
- Brown, Thomas G.**  
*see* Ruwanpura, Janaka Y., 1432
- Bruckner, J.**  
*see* Gasparini, D. A., 1480
- Bruen, Michael**  
Combined Hydraulic and Black-Box Models for Flood Forecasting in Urban Drainage Systems, 1131
- Bruen, Michael P.**  
Through it All, 2004
- Brühwiler, Eugen**  
*see* Habel, Katrin, 1615
- Brumbelow, Kelly**  
*see* Bristow, Elizabeth C., 1145
- Brunelle, Andrea**  
*see* Kim, Tae H., 1922
- Bruno, Michael S.**  
*see* Roarty, Hugh J., 1875
- Brusseau, Mark L.**  
*see* Simon, Michelle A., P.E., 599
- Bryant, Paul T., P.E.**  
Decline of the Engineering Class: Effects of Global Outsourcing of Engineering Services, 1910
- Bu, J. Q.**  
Innovative Bridge Condition Assessment from Dynamic Response of a Passing Vehicle, 579
- see* Law, S. S., 442
- Buchberger, Steven G.**  
*see* Khanal, Nabin, 1830
- Buckle, Ian G.**  
*see* Carden, Lyle P., 1471
- see* Carden, Lyle P., 1472
- Bucur, Daniel**  
Considerations from the Design of Intercepting Drainage for Collecting Water from Steep Areas, 1231

## AUTHOR INDEX

Camenen

- Budek, Andrew**  
Validation of Finite-Element Analyses for Storm Shelters, 89
- Budhu, Muniram**  
*see* Merry, Scott M., 829
- Bugmann, G.**  
*see* Zhou, G. C., 276
- Bulleit, William M.**  
Reliability of Steel Dowelled Wood Connections  
Designed to ASCE 16-95, 1482
- Bullock, Darcy M.**  
*see* Garcia, Camilo, 339
- Bunz, Kimberly R.**  
Survey of Sustainable Building Design Practices in  
North America, Europe, and Asia, 88
- Buonopane, S. G.**  
Reliability of Steel Frames Designed with Advanced  
Analysis, 1465
- Burgueño, Rigoberto**  
Membrane-Based Forms for Innovative FRP Bridge  
Systems through Structural Optimization, 234
- Shear Response of Concrete-Filled FRP Composite,**  
1533
- Burke, Susan**  
*see* Marques, Guilherme F., 1849
- Burkett, William R.**  
*see* Bai, Yong, 400
- Burkett, William R., P.E.**  
*see* Bai, Yong, P.E., 130
- see* Bai, Yong, P.E., 321
- Burkhalter, J. Philip**  
Evaluating Regional Solutions to Salinization and  
Waterlogging in an Irrigated River Valley, 1166
- Burks, K.H. @ rshall Space Flight Center (MSFC),**  
in Huntsville, Alabama.
- see* Bodiford, Melanie P., 2011
- Burman, Brian C.**  
Sudden Failure of a Heavily Loaded Container Pavement, 912
- Burnett, Eric**  
*see* Shi, Xing, 92
- Burns, S. E.**  
Coupled Mechanical and Chemical Behavior of Ben-tonite Engineered with a Controlled Organic Phase, 907
- Burns, Scott A.**  
*see* Liu, Min, 1444
- Burrell, Brian C.**  
*see* Beltaos, Spyros, 1056
- Burris, Mark, P.E.**  
Benefit-Cost Analysis of Variable Pricing Projects:  
QuickRide HOT Lanes, 1682
- see* Sullivan, Edward, P.E., 1683
- Burton, Melissa D.**  
Frequency Dependence of Human Response to Wind-  
Induced Building Motion, 1468
- Bussière, B.**  
*see* Mbonimpa, M., 881
- Butler, Colleen J.**  
Emotional Intelligence and Leadership Behavior in  
Construction Executives, 1251
- Buttar, William G.**  
Application of Graded Finite Elements for Asphalt  
Pavements, 459
- see* Song, Seong Hyeok, 563
- Büyüköztürk, Oral**  
*see* Au, Ching, 192
- Byfield, Mike P.**  
Behavior and Design of Commercial Multistory Build-  
ings Subjected to Blast, 1398
- Byrd, Larry W.**  
*see* Birman, Victor, 78
- Byrom, Keith**  
*see* Brandenburg, Stefanie G., 1248
- Byron, Tom**  
*see* Onar, Arzu, 1748
- Byung-Tak, Kim**  
*see* Young-Su, Kim, 917
- Cable, James K.**  
*see* Wang, Kejin, 1302
- Cabrillac, Richard**  
*see* Delfosse-Ribay, Estelle, 823
- Cai, C. S.**  
*see* Zhang, Yin, 144
- Cai, Hubo**  
Geographic Information Systems/National Elevation  
Data Route Mileage Verification, 1646
- Cai, J. G.**  
*see* Zhao, X. B., 498
- Cai, Meifeng**  
*see* Xie, Mowen, 839
- Cai, Ximing**  
Calibrating Holistic Water Resources — Economic  
Models, 1844
- see* Ringler, Claudia, 1850
- Caldas, Carlos H.**  
Using Global Positioning System to Improve Materi-  
als-Locating Processes on Industrial Projects, 361
- see* Costa, Dayana B., 1255
- see* Kim, Changwan, 262
- see* Song, Jongchul, 378
- Calijuri, Maria Lúcia**  
*see* Melo, André L. O., 1652
- Calloway, Bond, Jr.**  
*see* Vijayaraghavan, Krishna, 680
- Camac, Bronwyn A.**  
Local Rotations in Borehole Breakouts — Observed  
and Modeled Stress Field Rotations and Their Impli-  
cations for the Petroleum Industry, 52
- Camenen, Benoît**  
Equivalent Roughness Height for Plane Bed under  
Steady Flow, 1048

**Cameron**

- Cameron, Shara**  
*see* Peirson, William L., 1044
- Camotim, Dinar**  
*see* Silvestre, Nuno, 1491
- Campbell, Brian K.**  
Improving Fluid Flow in Clarifiers using a Highly Porous Media, 726
- Campbell, Douglas**  
Failure Mechanisms and Deployment Accuracy of Elastic-Memory Composites, 75
- Campbell, Lorna**  
*see* Manes, Costantino, 1028
- Campos, Luiza C.**  
Deterministic-Based Model of Slow Sand Filtration. I: Model Development, 697
- Deterministic-Based Model of Slow Sand Filtration. II: Model Application, 698
- Canbay, Erdem**  
High-Strength Concrete Columns under Eccentric Load, 1541
- Cao, Guangjing**  
*see* Dai, Huichao, 349
- Cao, Maosen**  
Nondestructive Assessment of Reinforced Concrete Structures Based on Fractal Damage Characteristic Factors, 531
- Cao, Zhixian**  
Explicit Formulation of the Shields Diagram for Incipient Motion of Sediment, 1041
- Flow Resistance and Momentum Flux in Compound Open Channels, 1059
- Capitão, Silvino Dias**  
Assessing Permanent Deformation Resistance of High Modulus Asphalt Mixtures, 1704
- Caplow, Ted**  
*see* Ho, David T., 774
- Capra, Bruno**  
*see* Poyet, Stéphane, 1328
- Capri, Salvatore**  
*see* Ignaccolo, Matteo, 1789
- Caravelli, Alejandro**  
Effect of Ozone on Filamentous Bulking in a Laboratory Scale Activated Sludge Reactor using Respirometry and INT-Dehydrogenase Activity, 713
- Carden, Lyle P.**  
Seismic Performance of Steel Girder Bridges with Ductile Cross Frames using Single Angle X Braces, 1471
- Seismic Performance of Steel Girder Bridges with Ductile Cross Frames using Buckling-Restrained Braces, 1472
- Cardenas, Henry E.**  
Electrokinetic Nanoparticle Treatment of Hardened Cement Paste for Reduction of Permeability, 1323
- Cardon, Grant E.**  
*see* Garcia, Luis A., 1227
- see* Wittler, James M., 1213
- Cardoso, António Heleno**  
*see* Leal, João Gouveia Aparício Bento, 938
- Carnivale, Michael, III**  
*see* Grubb, Dennis G., 831
- Carnivale, Michaeil, III**  
*see* Grubb, Dennis G., 830
- Carpenter, Samuel H.**  
*see* Pan, Tongyan, 1726
- Carpenter, Theresa M.**  
*see* Shamir, Eylon, 1111
- Carpinteri, Alberto**  
Structural Monitoring and Integrity Assessment of Medieval Towers, 1605
- Carré, H.**  
*see* Noumowé, A., 1349
- Carrillo, Patricia**  
Exploiting Knowledge Management: The Engineering and Construction Perspective, 1237
- Carrillo, Patricia M.**  
*see* Al-Ghassani, Ahmed M., 340
- Carron, John C.**  
Modeling Uncertainty in an Object-Oriented Reservoir Operations Model, 1176
- Carter, Gregory**  
Safety Hazard Identification on Construction Projects, 308
- Carter, J. P.**  
*see* Surjadinata, J., 49
- Carter, Stephen**  
*see* Zou, Rui, 644
- Casagrande, Michèle Dal Toé**  
Behavior of a Fiber-Reinforced Bentonite at Large Shear Displacements, 918
- Casas, J. R.**  
*see* Ramos, G., 240
- Casello, Jeffrey M.**  
Transportation Activity Centers for Urban Transportation Analysis, 1800
- Cassada, David**  
*see* Adam, Michael, 763
- Cassidy, Eric D.**  
Performance of Wood Shear Walls Sheathed with FRP-Reinforced OSB Panels, 1453
- Castro, Maria**  
Fatigue and Healing of Asphalt Mixtures: Discriminate Analysis of Fatigue Curves, 1680
- Castro-Lacouture, Daniel**  
Implementing a B2B e-Work System to the Approval Process of Rebar Design and Estimation, 248
- Cataño-Lopera, Yovanni**  
Burial of Short Cylinders Induced by Scour under Combined Waves and Currents, 1897
- Catbas, F. Necati**  
Use of Modal Flexibility for Damage Detection and Condition Assessment: Case Studies and Demonstrations on Large Structures, 1607

**2006 ASCE TRANSACTIONS**

## AUTHOR INDEX

Chan

- Cavalcanti, Luiz F. N.  
*see* Steinemann, Anne C., 1817
- Çavdar, Ahmet  
*see* Yetgin, Şükrü, 1356
- Ceccotti, Ario  
*see* Fragiacomo, Massimo, 1440
- Çelebi, Mehmet  
*see* Rodgers, Janise E., 1591
- Cen, Minyi  
*see* Zhou, Guoqing, 1782
- Cerato, A. B.  
Bearing Capacity of Square and Circular Footings on a Finite Layer of Granular Soil Underlain by a Rigid Base, 916
- Cerco, Carl  
*see* Wang, Ping, 625
- Ceroni, Francesca  
*see* Pecce, Marisa, 207
- Cervantes, Refugio  
*see* Rojas, Eduardo, 43
- see* Rojas, Eduardo, 44
- Cetin, K. O.  
*see* Moss, R. E. S., 873
- Cetin, K. Onder  
Standard Penetration Test-Based Probabilistic and Deterministic Assessment of Seismic Soil Liquefaction Potential, 10
- Četina, Matjaž  
Case Study: Numerical Simulations of Debris Flow below Stože, Slovenia, 943
- Ceyla, Ayhan  
Precise Height Determination using Leap-Frog Trigonometric Leveling, 1657
- Ceylan, Halim  
Developing Combined Genetic Algorithm — Hill-Climbing Optimization Method for Area Traffic Control, 1736
- Cha, Dong-Hoon  
*see* Park, Heekyung, 762
- Cha, Hee Sung  
Characteristics for Leveraging Value Management Processes on Capital Facility Projects, 1253
- Chaallal, Omar  
CFRP Repair and Strengthening of Structurally Deficient Piles: Design Issues and Field Application, 191
- Circular Columns Confined with FRP: Experimental versus Predictions of Models and Guidelines, 189
- see* Arockiasamy, Madasamy, 1366
- Chaallal, Omar, P.E.  
*see* Lan, André, P.E., 1974
- Chaffin, John H.  
Hydrogen Production by Plasma Electrolysis, 431
- Chahrour, Ali  
*see* El Maaddawy, Tamer, 202
- Chahrour, Ali H.  
Structural Retrofitting of Deteriorated Concrete Lighting Poles using FRP Sheets in Wet Layup — Field Application, 211
- Chai, Jin-Chun, ed.  
*see* Porbaha, Ali, ed., 2072
- Chai, Y. H.  
*see* Wang, C. M., 1463
- Chakrabarti, Partha, P.E.  
*see* Chakrabarti, Subrata K., P.E., 1869
- Chakrabarti, Subrata K., P.E.  
Design, Construction, and Installation of a Floating Caisson used as a Bridge Pier, 1869
- Chakraborty, D.  
*see* Rao, S. V. N., 1118
- Chakraborty, Santanu  
Development and Implementation of a Continuous Strain Monitoring System on a Multi-Girder Composite Steel Bridge, 179
- Chakravarthy, Srikanth  
*see* Ishak, Sherif, 277
- Chakroborty, Partha  
*see* Agarwal, Pradeep Kumar, 1141
- Challamel, Noël  
On the Comparison of Timoshenko and Shear Models in Beam Dynamics, 554
- Chamani, Mohammad R.  
*see* Beirami, M. K., 1037
- Chamness, Crystal, P.E.  
*see* Hook, David E., P.E., 2032
- Chan, A. H. C.  
*see* Dunn, S. L., 1881
- Chan, Andy T.  
Analytical Study of Turbulent Pollutant Dispersion near a Low Hill, 444
- Chan, C. H. C.  
*see* Lam, K. M., 991
- Chan, Charles K. L.  
*see* Chan, Edwin H. W., 332
- Chan, Chun-Man  
Nonlinear Stiffness Design Optimization of Tall Reinforced Concrete Buildings under Service Loads, 1536
- Chan, Edwin H. W.  
MAUT-Based Dispute Resolution Selection Model Prototype for International Construction Projects, 332
- Chan, F.  
*see* Zhang, L. M., 854
- Chan, Philip C. F.  
Security of Payment Legislation — Case of a Blunt but Practical and Equitable Instrument, 1427
- Chan, S. L.  
*see* Law, S. S., 442
- Chan, Wai-Shan  
Assessment of Dynamic Measurement Accuracy of GPS in Three Directions, 1656

- Chan, Wing  
*see Ariaratnam, Samuel T.*, 1984
- Chandra, Satish  
Structural Adequacy of Flexible Pavements with Types and Widths of Shoulders, 1670  
*see Dey, Partha Pratim*, 1713  
*see Dey, Partha Pratim*, 1728  
*see Kumar, Praveen*, 1326
- Chandramouli, Magesh  
*see Liu, Nan*, 286
- Chang, Andrew S., P.E.  
System Model for Analyzing Design Productivity, 1240
- Chang, C. C.  
Evaluation of a GPS-Based Approach for Rapid and Precise Determination of Geodetic/Astronomical Azimuth, 1661
- Chang, C. S.  
*see Hicher, P.-Y.*, 874
- Chang, Chang-Ching  
*see Lin, Chi-Chang*, 549
- Chang, Cheng-Feng  
Development and Production of Ready-Mixed Soil Material, 1354
- Chang, Cheng-Hsin  
Computational Fluid Dynamics Simulation of Concentration Distributions from a Point Source in the Urban Street Canyons, 67
- Chang, E. E.  
*see Hsing, Hao-Jan*, 1940
- Chang, Feng-Yueh  
*see Lin, Yun-Huin*, 630
- Chang, Gang-Len  
*see Liu, Ying*, 1751
- Chang, Heui-Yung  
Effects of Ground Motion Parameters and Cyclic Degradation Behavior on Collapse Response of Steel Moment-Resisting Frames, 1592
- Chang, Howard H.  
*see Huang, He Qing*, 1002
- Chang, Hsien-Kuo  
Solving Wave Dispersion Equation for Dissipative Media using Homotopy Perturbation Technique, 1857
- Chang, Hsin-Li  
Risk Factors to Driver Fatalities in Single-Vehicle Crashes: Comparisons between Non-Motorcycle Drivers and Motorcyclists, 1687
- Chang, Kuang-An  
*see Jung, Kwang Hyo*, 454  
*see Lin, Chang*, 488
- Chang, Kuo-Chun  
*see Lin, Tzu-Kang*, 1566  
*see Lin, Tzu-Kang*, 1567
- Chang, S. Y.  
*see Han, S. C.*, 69
- Chang, Shuenn-Yih  
Accurate Representation of External Force in Time History Analysis, 438
- Chang, Stephanie  
*see Scawthorn, Charles*, 1929
- Chang, Sung-Chieh  
*see Lin, Chang*, 488
- Chang, Wen-Jong  
*see Lai, Sheng-Yao*, 843
- Changnon, Stanley A.  
Frequency Distributions of Heavy Snowfall from Snowstorms in the United States, 1114
- Chanona, J.  
Simple Rule-Based Algorithm for Optimizing Volatile Fatty Acids Production in Primary Sludge Fermentation Schemes, 747
- Chansawat, Kasidit  
Nonlinear Finite-Element Analysis of a FRP-Strengthened Reinforced Concrete Bridge, 106
- Chanson, H.  
Dam Break Wave of Thixotropic Fluid, 960
- Minimum Specific Energy and Critical Flow Conditions in Open Channels, 1221
- Chanton, Jeffrey  
*see Abichou, Tarek*, 607
- Chao, Jianghui  
*see Singh, Rajkeshar*, 84
- Chao, Keh-Ping  
Estimation of Diffusion Coefficients and Solubilities for Organic Solvents Permeation through High-Density Polyethylene Geomembrane, 657
- Chao, Kuo-Chieh, P.E.  
Design and Installation of Deep Benchmarks in Expansive Soil, 1658
- Chao, Shih-Ho  
Ductile Web Fracture Initiation in Steel Shear Links, 1556
- Chao, Xiaobo  
Development and Application of a Phosphorus Model for a Shallow Oxbow Lake, 753
- Chao, Yi-Feng  
*see Chen, Hung-Ming*, 260
- Chapman, Robert E.  
*see Matthews, Benjamin*, 1259
- Characklis, Gregory W.  
*see Fries, J. Stephen*, 736  
*see Kirsch, Brian R.*, 1847  
*see Travaglia, Andrea M.*, 1853
- Charbeneau, Randall J.  
Hydraulic Performance Curves for Highway Culverts, 978
- Charney, Finley A., ed.  
17th Analysis and Computation Specialty Conference, 2044
- Chartier, Myriam  
*see Levasseur, Béatrice*, 654

## AUTHOR INDEX

Chen

- Chastain, James R., Jr., P.E.  
Methodology for Locating Monitoring Stations to Detect Contamination in Potable Water Distribution Systems, 1162
- Chatterjee, Chandranath  
*see* Sahoo, Bhabagrahi, 1124
- Chatti, Karim  
*see* Salama, Hassan K., 1747
- Chaudhry, M. H.  
*see* Mohapatra, P. K., 952
- Chaudhuri, Dipankar  
Life of Maithon Reservoir on Ground of Sedimentation: Case Study in India, 1019
- Chaudhuri, Reaz A.  
*see* Kim, Deokjoo, 569
- Chaudhuri, Samit Ray  
Fragility of Bench-Mounted Equipment Considering Uncertain Parameters, 1527
- Chavel, B. W.  
Construction of a Horizontally Curved Steel I-Girder Bridge. Part I: Erection Sequence, 112
- Construction of a Horizontally Curved Steel I-Girder Bridge. Part II: Inconsistent Detailing, 113
- Chazallon, C.  
Elastoplastic Model for the Long-Term Behavior Modeling of Unbound Granular Materials in Flexible Pavements, 40
- Cheah, Charles Y. J.  
*see* Yee, Chung Yan, 1254
- see* Yee, Chung Yan, 1260
- Chen, Anthony  
*see* Lee, Ming S., 1790
- Chen, C. M.  
Elastic Constants Identification of Composite Materials using Single Angle-Ply Laminate, 560
- Chen, C. Y.  
*see* Lai, C. H., 1942
- Chen, Chi-Chung  
Elevation-Dependent Management of the Edwards Aquifer: Linked Mathematical and Dynamic Programming Approach, 1836
- Chen, Chien-Hsun  
*see* Liu, Chia-Nan, 886
- Chen, Chuin-Shan  
*see* Leu, Liang-Jenq, 1531
- Chen, Dar Hao  
Lessons Learned on Jointed Concrete Pavement Rehabilitation Strategies in Texas, 1690
- Chen, Dar-Hao  
Failure Investigation of a Foamed-Asphalt Highway Project, 1140
- Chen, Guohua  
*see* Fang, Qian, 584
- see* Hu, Jing, 679
- Chen, Huang-Lin  
*see* Lin, Chi-Chang, 549
- Chen, Hua-Wei  
*see* Ku, Young, 775
- Chen, Hung-Ming  
Application of Web Services for Structural Engineering Systems, 260
- Chen, Jieyun  
Analytical Urban Storm Water Quality Models Based on Pollutant Buildup and Washoff Processes, 734
- Semidistributed Form of the Tank Model Coupled with Artificial Neural Networks, 1112
- Chen, Jing-Wen  
*see* Chang, Cheng-Feng, 1354
- Chen, Joseph Y.  
*see* Desai, Chandra S., 19
- Chen, Ju  
Behavior of High Strength Structural Steel at Elevated Temperatures, 1631
- Chen, Ko-Wei  
*see* Tsai, Yung-Pin, 602
- Chen, Kuo-Cheng  
*see* Lin, Yun-Huin, 630
- Chen, Liang-Chien  
Measuring System for Cracks in Concrete using Multitemporal Images, 1651
- Chen, Liang-Chuan  
Charge Reversal Effect on Blanket in Full-Scale Floc Blanket Clarifier, 756
- Chen, Qin  
Fully Nonlinear Boussinesq-Type Equations for Waves and Currents over Porous Beds, 457
- Chen, Sheng-Jin  
*see* Yang, Min-Lung, 293
- Chen, Shi-Shuenn  
Simplified Model for Vertical Vibrations of Surface Foundations, 838
- see* Hsiung, Yun-Mei, 899
- Chen, Shun-Tyan  
*see* Yang, Min-Lung, 293
- Chen, Shyi-Tien  
Fate and Modeling of Pentachlorophenol Degradation in a Laboratory-Scale Anaerobic Sludge Digester, 689
- Treating Soil PCP at Optimal Conditions using Heme and Peroxide, 678
- Chen, Stuart S., P.E.  
*see* Ahn, Il-Sang, 475
- Chen, Su Huan  
Dynamic Response of Closed-Loop System with Uncertain Parameters using Interval Finite-Element Method, 520
- Chen, W. S.  
*see* Cheng, Y. M., 42
- Chen, W. Z.  
*see* Shao, J. F., 23
- Chen, Wenling  
Effectiveness of Learning Transportation Network Growth through Simulation, 1410

- Chen, Xinzhong**  
Analysis of Long Span Bridge Response to Winds:  
Building Nexus between Flutter and Buffeting, 1637
- Revisiting Multimode Coupled Bridge Flutter: Some  
New Insights, 551
- Chen, Yang**  
*see* Fang, Dongping, 345
- Chen, Yi**  
Durability Prediction for GFRP Reinforcing Bars using  
Short-Term Data of Accelerated Aging Tests, 216
- Chen, Yingzhao**  
*see* Kopp, Gregory A., 1529
- Chen, Yongbing**  
*see* Bian, Shaofeng, 1641
- Chen, Yuh-Jyh**  
*see* Hsu, Tung-Wen, 1681
- Chen, Yunliang**  
*see* Ye, Mao, 1021
- Chen, Z. Q.**  
*see* Kavvas, M. L., 1099
- Chen, ZhiQiang**  
*see* Hutchinson, Tara C., 265
- Chen, Zhiyi**  
Hysteretic Model of Stiffened Shear Panel Dampers,  
1486
- Cheng, C. H.**  
*see* Lin, T. T., 1953
- Cheng, Eddie W. L.**  
Job Performance Evaluation for Construction Companies:  
An Analytic Network Process Approach, 370
- Cheng, G. H.**  
*see* Tan, K. H., 1507
- Cheng, Han-Tsung**  
*see* Lin, Chiou-Liang, 708
- Cheng, J. J. R.**  
*see* Khoo, H. A., 546
- Cheng, Juey-Fu**  
Model for Three-Dimensional Highway Alignment,  
1764
- Cheng, Lijuan**  
Fatigue Behavior of a Steel-Free FRP — Concrete  
Modular Bridge Deck System, 150
- Cheng, Y. M.**  
New Approach to Determine Three-Dimensional Contacts in Blocks System: Penetration Edges Method,  
42
- Chennapragada, Uday Kiran**  
*see* Chandra, Satish, 1670
- Cheung, Fiona Y. K.**  
*see* Rowlinson, Steve, 1414
- Cheung, Kwok Fai**  
*see* Wei, Yong, 1866
- Cheung, Sai Hung**  
*see* Katafygiotis, Lambros, 482
- Cheung, Sai On**  
How Relational are Construction Contracts?, 1411
- A Study of Styles and Outcomes in Construction Dispute Negotiation, 368
- see* Yiu, Tak Wing, 389
- Chi, W.-M.**  
Prediction of Ductile Fracture in Steel Connections  
using SMCS Criterion, 1455
- Chiang, Chow F.**  
Critical Analysis of Computing Equations for Determination of BOD by Dilution Methods, 651
- Chiang, Pen-Chi**  
*see* Hsing, Hao-Jan, 1940
- Chiavaccini, Pietro**  
*see* Pagliara, Stefano, 935
- see* Pagliara, Stefano, 986
- see* Pagliara, Stefano, 1197
- Chien, Chao-Yu**  
*see* Show, Kuan-Yeow, 1267
- Chien, Sheng-Fen**  
*see* Perng, Yeng-Horng, 390
- Chien, Yi-Chi**  
Emission of Polycyclic Aromatic Hydrocarbons on the  
Combustion of Liquid Crystal Display Components,  
716
- Chiew, Sing-Ping**  
*see* Lie, Seng-Tjhen, 1475
- see* Lie, Seng-Tjhen, 1476
- Chiewanchakorn, Methhee**  
*see* Alnahhal, Wael I., 148
- Chim, Pui Shan**  
*see* Cheung, Sai On, 1411
- Chin, Chung-Tien, ed.**  
*see* Zhu, Hehua, ed., 2095
- Chin, Hoong Chor**  
Influence of School Accessibility on Housing Values,  
1785
- Chinea, Reynaldo R.**  
Total Friction Loss along Multiple Outlets Pipes with  
Open End, 1167
- Ching, Jianye**  
Bayesian State Estimation Method for Nonlinear Systems  
and its Application to Recorded Seismic Response, 474
- Chinnarasri, Chayuth**  
Flow Patterns and Energy Dissipation over Various  
Stepped Chutes, 1172
- Chinowsky, Paul**  
*see* Carrillo, Patricia, 1237
- Chinowsky, Paul S.**  
Developing Knowledge Landscapes through Project-Based Learning, 1416
- see* Butler, Colleen J., 1251
- Chipello, Peter L.**  
*see* Miller, Jennifer H., 732
- Chirgwin, Gordon J.**  
*see* Ancich, Eric J., 157

## AUTHOR INDEX

Chu

- Chiu, Chui-Te  
*see* Chen, Dar-Hao, 1140
- Chiu, Yi-Chang  
*see* Gharaibeh, Nasir G., P.E., 1137
- Chiu, Yu-Jia  
*see* Lee, Hong-Yuan, 1109
- Cho, Chung-Suk  
*see* Gibson, G. Edward, Jr., 1241
- Cho, Gye-Chun  
Particle Shape Effects on Packing Density, Stiffness, and Strength: Natural and Crushed Sands, 832
- Cho, Hsun-Jung  
*see* Jou, Yow-Jen, 1794
- Cho, Sang-Won  
*see* Jo, Ji-Seong, 515
- Cho, Yon-Ho  
UTW Behavior on Asphalt Pavements Tested with HWLS, 1760
- Cho, Young-Jun  
Characteristics of Contractor's Liabilities for Defects and Defective Work in Korean Public Projects, 1422
- Chodraui, Gustavo Monteiro de Barros  
Distortional Buckling of Cold-Formed Steel Members, 1503
- Choi, Christopher Y.  
*see* Song, Inhong, 725
- Choi, Derek  
*see* Ariaratnam, Samuel T., 1984
- Choi, E. S. C.  
*see* Wong, R. C. K., 904
- Choi, Hangseok  
Slug Test Analysis in Vertical Cutoff Walls. I: Analysis Methods, 817
- Slug Test Analysis in Vertical Cutoff Walls. II: Applications, 818
- Choi, Hyunhoon  
*see* Kim, Jinkoo, 1526
- Choi, K.  
*see* Park, H., 1509
- Choi, Keechoo  
*see* Lee, Sangsoo, 1750
- Choi, S.  
*see* Han, S. C., 69
- Choi, Yeol  
*see* Jung, Jiwon, 164
- Choi, Young Cheol  
*see* Oh, Byung Hwan, 545
- Chon, Kyung Soo  
*see* Suh, Wonho, 1734
- Chong, Wai Kiong  
*see* Bechir, Salwa M. A., 326
- Chong, Wai-Kiong  
Latent Building Defects: Causes and Design Strategies to Prevent Them, 1386
- Choo, C. C.  
*see* Alagusundaramoorthy, P., 141
- Chootinan, Piya  
*see* Lee, Ming S., 1790
- Chopra, Anil K.  
*see* Ryan, Keri L., 1548
- Chotickai, Piya  
Comparative Study of Fatigue Provisions for the AASHTO Fatigue Guide Specifications and LRFR Manual for Evaluation, 169
- Truck Models for Improved Fatigue Life Predictions of Steel Bridges, 111
- Chou, C. C.  
Experimental Evaluation of Compressive Behavior of Orthotropic Steel Plates for the New San Francisco — Oakland Bay Bridge, 118
- Chou, Shan-Shan  
*see* Chen, Liang-Chuan, 756
- Chou, Yi-Chuan  
*see* Hsiung, Yun-Mei, 899
- Choubane, B., P.E.  
*see* Kumara, M. W., 1749
- Choubane, Bouzid  
*see* Onar, Arzu, 1748
- Choudhury, Deepankar  
Seismic Bearing Capacity of Shallow Strip Footings Embedded in Slope, 30
- Choura, S.  
*see* Baccouch, M., 72
- Chow, Lee-Fang  
*see* Li, Min-Tang, 1735
- Chow, Y. K.  
*see* Leung, C. F., 781
- see* Ong, D. E. L., 780
- Chowdhury, B.  
Laboratory Study of Liquefaction due to Wave-Seabed Interaction, 856
- Chowdhury, Shakhatat  
Evaluation of Drinking Water Treatment Technology: An Entropy-Based Fuzzy Application, 728
- Christenson, Richard E.  
Coupled Building Control Considering the Effects of Building/Connector Configuration, 1524
- Experimental Verification of Smart Cable Damping, 462
- Christian, John  
*see* Newton, Linda A., 1157
- Christy, Craig T., P.E.  
Engineering with the Spreadsheet — Structural Engineering Templates Using Excel, 2063
- Chryssanthopoulos, Marious K.  
*see* Photiou, Nikolaos K., 1335
- Chu, B. L.  
*see* Chu, Daniel B., 922

- Chu, Daniel B.**  
Liquefaction-Induced Lateral Spreading in Near-Fault Regions during the 1999 Chi-Chi, Taiwan Earthquake, 922
- Chu, Hsin**  
*see* Hung, Wen-Chi, 751
- Chu, Lily**  
*see* Fong, Patrick Sik-wah, 380
- Chu, Sue-Hua**  
*see* Weng, Chih-Huang, 1959
- Chu, Xuefeng**  
Improved Compartmental Modeling and Application to Three-Phase Contaminant Transport in Unsaturated Porous Media, 606
- Chua, D. K. H.**  
CB-Contract: Case-Based Reasoning Approach to Construction Contract Strategy Formulation, 284
- Chua, David K. H.**  
Use of a WBS Matrix to Improve Interface Management in Projects, 234  
*see* Song, Yuanbin, 418
- Chua, Lloyd H. C.**  
Coupling of U-Tube and Shear Layer Oscillations in an Interconnected Flow Compartment, 511
- Chuchepakul, S.**  
*see* Phungpaingam, B., 436
- Chuchepakul, Somechai**  
*see* Pulngern, Tawich, 1517
- Chugh, Y. P.**  
*see* Mohanty, Samrat, 1769
- Chugh, Yoginder**  
*see* Mohanty, Samrat, 1993
- Chui, Ying H.**  
*see* Mi, Hongyong, 1452
- Chun, Yoon-Moon**  
*see* Naik, Tarun R., 1347
- Chung, D. D. L.**  
*see* Wen, Sihai, 1299
- Chung, H. S.**  
*see* Kwon, Y. B., 1498
- Chung, Hsin-Yang**  
Optimal Inspection Scheduling of Steel Bridges using Nondestructive Testing Techniques, 134
- Chung, Lip-Lai**  
*see* Lin, Tzu-Kang, 1566
- Chung, Shin Fun**  
Effect of Penetration Rate on Penetrometer Resistance in Clay, 887
- Chung, Tae Hwan**  
Bayesian Updating Application into Simulation in the North Edmonton Sanitary Trunk Tunnel Project, 376
- Chung, Weihao**  
Classifying River Waves by the Saint Venant Equations Decoupled in the Laplacian Frequency Domain, 998
- Chung, Wonseok**  
Influence of Secondary Elements and Deck Cracking on the Lateral Load Distribution of Steel Girder Bridges, 122
- Chusilp, Praween**  
*see* Inoue, Kazuo, 1525
- Chyan, J.-M.**  
*see* Lu, M.-C., 1965
- Chyan, Yuh-Ju**  
*see* Lee, Kwan Tun, 963
- Ciancia, Andrew J., P.E.**  
Challenges of Underpinning Two Landmark Buildings, 1985
- Clar, Michael, ed.**  
*see* Field, Richard, ed., 2052
- Clark, Shawn**  
Laboratory Experiments on Frazil-Size Characteristics in a Counterrotating Flume, 941
- Clark, Shirley, ed.**  
*see* Field, Richard, ed., 2052
- Clayton, Wilson**  
*see* Adam, Michael, 763
- Clemens, François H. L. R.**  
*see* Korving, Hans, 1039
- Clements, Nancy, P.E.**  
*see* Warren, Christopher L., P.E., 1916
- Clemmens, A. J.**  
*see* Bautista, E., 1180
- Clemmens, Albert J.**  
Accuracy of Annual Volume from Current-Meter-Based Stage Discharges, 1121  
*see* Wahlin, Brian T., 1186  
*see* Wahlin, Brian T., 1187
- Cleveland, Theodore G.**  
Instantaneous Unit Hydrograph Evaluation for Rainfall-Runoff Modeling of Small Watersheds in North and South Central Texas, 1218
- Cliff, Eugene M.**  
*see* Salehian, Armanagh, 79
- Clift, Charles D.**  
Curtain Wall Designs for Wind and Blast: Three Case Studies, 99
- Clyne, Timothy R.**  
*see* Marasteanu, Mihai O., 1304
- Coelho, Ana M. Girâ**  
Finite-Element Modeling of the Nonlinear Behavior of Bolted-T-Stub Connections, 1530
- Cohen, Ayala**  
*see* Gitelman, Victoria, 1668
- Coifman, Benjamin**  
Vehicle Level Evaluation of Loop Detectors and the Remote Traffic Microwave Sensor, 1688
- Cokgor, Emine Ubay**  
Respirometric Assessment of Primary Sludge Fermentation Products, 590

**AUTHOR INDEX****Couto**

- Cole, Britton**  
Flexural Load Testing of Concrete-Filled FRP Tubes with Longitudinal Steel and FRP Rebar, 204
- Cole, D. J.**  
*see* Cox, S. E., 859
- Cole, Ryan T.**  
Passive Earth Pressure Mobilization during Cyclic Loading, 884
- see Rollins, Kyle M.**, 883
- Cole, Thomas A.**  
Fatigue Behavior and Nondestructive Evaluation of Full-Scale FRP Honeycomb Bridge Specimen, 145
- Coleman, Stephen**  
*see* Melville, Bruce, 956
- see Melville, Bruce**, 988
- Collieck, Amy S.**  
Hydrological Evaluation of Septic Disposal Field Design in Sloping Terrains, 731
- Collins, Kevin R.**  
*see* Kim, Juwhan, 1550
- Collop, Andrew C.**  
*see* Kruntcheva, Mariana R., 1312
- Comfort, Steve**  
*see* Adam, Michael, 763
- Conachen, Mack**  
*see* Bank, Lawrence C., 208
- Conboy, Thomas**  
*see* Wan, Yongshan, 1835
- Conner, Stewart**  
Influence of Parapets and Aspect Ratio on Live-Load Distribution, 123
- Connor, Robert J.**  
Consistent Approach to Calculating Stresses for Fatigue Design of Welded Rib-to-Web Connections in Steel Orthotropic Bridge Decks, 154
- Identifying Effective and Ineffective Retrofits for Distortion Fatigue Cracking in Steel Bridges Using Field Instrumentation, 178
- Conrath, Edward J., P.E.**  
*see* Norville, H. Scott, P.E., 97
- Consoli, Nilo Cesar**  
*see* Casagrande, Michèle Dal Toé, 918
- Consoli, Simona**  
Estimation of Evapotranspiration of Different-Sized Navel-Orange Tree Orchards using Energy Balance, 1164
- Measurement of Light Interception by Navel Orange Orchard Canopies: Case Study of Lindsay, California, 1165
- Constantinescu, Andrei**  
*see* Lecampion, Brice, 33
- Constantinescu, S. G.**  
*see* Tokay, T. E., 1062
- Constantinou, Michael C.**  
*see* Pavlou, Eleni, 1547
- Conte, Enrico**  
Plane Strain and Axially Symmetric Consolidation in Unsaturated Soils, 24
- Coop, Matthew Richard**  
*see* Casagrande, Michèle Dal Toé, 918
- Cooper, Charles M.**  
*see* Chao, Xiaobo, 753
- Cooper, Curtis A.**  
*see* Wittler, James M., 1213
- Cooper, R.W. @ rshall Space Flight Center (MSFC), in Huntsville, Alabama.**  
*see* Bodiford, Melanie P., 2011
- Coraceoglu, M. Yavuz**  
*see* Durmusoglu, Ertan, 39
- Corinaldesi, Valeria**  
Behavior of Beam-Column Joints made of Sustainable Concrete under Cyclic Loading, 1336
- Cornejo, Camilo**  
Irrigation Potential of the TRASVASE System (Santa Elena Peninsula, Guayas, Ecuador), 1215
- Cornier, S.**  
*see* Ioualalen, M., 1870
- Correia, João Pedro Ramôa Ribeiro**  
New Methodology: Permit Checking of Vehicular Overloads, 131
- Cort, Todd L.**  
Bioremediation of Surfactant Flush Wastewater from Wood Treatment Soil, 595
- Corte, Gaetano Della**  
Seismic Behavior of Sheathed Cold-Formed Structures: Numerical Study, 1494
- Seismic Upgrading of RC Buildings by FRP: Full-Scale Tests of a Real Structure, 1337
- see* Landolfo, Raffaele, 1495
- Costa, Dayana B.**  
Benchmarking Initiatives in the Construction Industry: Lessons Learned and Improvement Opportunities, 1255
- Costello, Seosamh B.**  
*see* Ortiz-García, José J., 1678
- Cottrell, David S.**  
Contractor Process Improvement for Enhancing Construction Productivity, 307
- Coulibaly, KAPO M.**  
Transport of Edible Oil Emulsions in Clayey Sands: One-Dimensional Column Results and Model Development, 1095
- see* Jung, Yong, 1096
- Coulibaly, Paulin**  
*see* Khan, Mohammad Sajjad, 1091
- Cousin, Patrice**  
*see* Debaiky, Ahmed S., 226
- Cousot, P.**  
*see* Chanson, H., 960
- Couto, A.**  
*see* Vidal, P., 542

- Cova, Thomas J.**  
*see* Kim, Tae H., 1922
- Cowie, Iain**  
*see* Newell, Charles J., P.E., 672
- Cox, Daniel T.**  
*see* Suh, Kyung-Duck, 1863
- Cox, Robert F.**  
 Proposed Subcontractor-Based Employee Motivational Model, 303
- Cox, S. E.**  
 Installation of Horizontal Wells in Landfilled Waste using Directional Drilling, 859
- Crandall, Jay H., P.E., ed.**  
 Residential Building Loads: Review and Roadmap for the Future, 2083
- Croley, Thomas E., II**  
 Watershed Surface and Subsurface Spatial Intraflows Model, 1071
- Croll, James G. A.**  
 Design Analysis for Buckling of Tanks and Silos, 1443
- Cross, Brad, ed.**  
 Structures Congress 2006: Structural Engineering and Public Safety, 2092
- Crowder, Mark L.**  
*see* Vijayaraghavan, Krishna, 680
- Cruise, J. F.**  
*see* Musleh, F. A., 948
- Cruz, Paulo J. S.**  
*see* Neves, Luís A. C., 1537
- Csik, Andras**  
*see* Szilagyi, Jozsef, 1097
- Cullum, R. F.**  
*see* Fox, G. A., 1133
- Culver, Teresa B.**  
*see* Bartelt-Hunt, Shannon L., 686
- Cumming, Lydia**  
*see* Lyons, Terrence, 639
- Cunniff, Dave**  
*see* Johnson, Billy E., 1960
- Cunningham, P. R.**  
*see* Schwingshakel, C. W., 74
- Cussler, Edward L.**  
*see* Shimotori, Tsutomu, 690
- Cuthbertson, Alan J. S.**  
 Model Study of the Influence of Submerged Tidal Barriers on Estuarine Mixing and Exchange Processes, 1034
- Cutter, A. Gillian**  
*see* McCuen, Richard H., 1132
- da Porto, F.**  
*see* Gasparini, D. A., 1480
- da Silva, Ana Maria Ferreira**  
 Variation of Flow Pattern with Sinuosity in Sine-Generated Meandering Streams, 1031
- da Silva, Luís Simões**  
*see* Coelho, Ana M. Girá, 1530
- Dagher, Habib, ed.**  
 Reliability-Based Design of Utility Pole Structures, 2082
- Dagher, Habib J.**  
*see* Cassidy, Eric D., 1453
- Dai, H.**  
 Dynamic Behavior of Nonlinear Cable System. IV, 464
- Dai, Huichao**  
 Management and Construction of the Three Gorges Project, 349
- Dai, Wu-Jiao**  
*see* Chan, Wai-Shan, 1656
- Daigle, Renaud**  
*see* Lan, André, P.E., 1974
- Dainty, A. R. J.**  
*see* Soetanto, R., 316
- Dainty, Andrew R. J.**  
 Indirect Discrimination in Construction Organizations and the Impact on Women's Careers, 1250
- Daloğlu, Ayşe T.**  
*see* Durmaz, Mustafa, 1553
- Daly, Steven F.**  
 Frazil Ice Blockage of Water Intakes in the Great Lakes, 1011
- Damgaard, J. S.**  
 Guidelines for Pipeline On-Bottom Stability on Liquefied Noncohesive Seabeds, 1883
- Dunn, S. L., 1881**  
*see* Teh, T. C., 1878
- Damjanović**  
*see* Zhang, Zhanmin, 1706
- Damjanovic, Ivan**  
 Determination of Required Falling Weight Deflectometer Testing Frequency for Pavement Structural Evaluation at the Network Level, 1671
- Dandanudi, Manoj**  
*see* Bolton, James, 745
- Dandino, Nancy**  
*see* Haroon, Saif Abdullah, 1382
- Dandy, G. C.**  
 Multi-Objective Trade-Offs between Cost and Reliability in the Replacement of Water Mains, 1809
- Daniel, David E.**  
*see* Choi, Hangseok, 817
- Daniel, Janice**  
*see* Allen-Munley, Cheryl, P.E., 1716
- Daniel, Jo Sias, P.E.**  
 Use of an Infrared Joint Heater to Improve Longitudinal Joint Performance in Hot Mix Asphalt Pavements, 1380
- Dao, Hien V.**  
 Achievement of 100% Removal of Oil from Feathers Employing Magnetic Particle Technology, 661

## AUTHOR INDEX

De

- Daoud, A.  
*see* Noumowé, A., 1349
- Dapp, Steven  
*see* Mullins, Gray, 822
- Dare, M. P.  
*see* Wu, Y.-F., 1306
- Dare, Peter  
*see* Berber, Mustafa, 1664
- Dargahi, Bijan  
Experimental Study and 3D Numerical Simulations for a Free-Overflow Spillway, 1022
- Dargush, Gary F.  
*see* Ahn, Il-Sang, 475
- Escobar-Sandoval, Edgard D., 1614
- Das, Animesh  
*see* Agarwal, Pradeep Kumar, 1141
- Dasari, G. R.  
*see* Chowdhury, B., 856
- Datta, Bithin  
*see* Singh, Raj Mohan, 1081
- Datta, T. K.  
*see* Bhardwaj, M. K., 1519
- see Rao, M. M., 252
- Davalos, J. F.  
*see* Salim, H. A., 225
- Davalos, Julie F.  
Fracture Mechanics Method for Mode-I Interface Evaluation of FRP Bonded to Concrete Substrates, 1346
- see* Chen, Yi, 216
- Davids, William G.  
*see* Cassidy, Eric D., 1453
- Davidson, J. W.  
Adjusting Nodal Demands in SCADA Constrained Real-Time Water Distribution Network Models, 942
- Davidson, Rachel A.  
Optimization of Investments in Natural Gas Distribution Networks, 425
- Davidson, Richard R.  
*see* Filz, George M., 4
- Daviero, Gregory J.  
Marine Wastewater Discharges from Multiport Diffusers. III: Stratified Stationary Water, 971
- see* Tian, Xiaodong, 972
- Davies, Peter A.  
*see* Cuthbertson, Alan J. S., 1034
- Davis, Atwood F.  
*see* Grubb, Dennis G., 831
- Davis, Gary  
*see* Spielholz, Peregrin, 393
- Davis, Jeffrey L.  
*see* Hwang, Sangchul, 610
- see* Wani, Altaf H., 1948
- Davis, Jennifer B.  
*see* Eckstrom, Richard L., 85
- Davis, Michael, P.E., ed.  
Cold Regions Engineering 2006 — Current Practices in Cold Regions Engineering, 2056
- Davister, M. D.  
The Most Degrading Postbuckling Mode of Pin-Jointed Structures, 513
- Dawe, J. L.  
Experimental Study of Offset HSS Connections, 1511
- Dawe, John L.  
Small-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1499
- see* Wood, James V., 1500
- Dawsey, Wesley J.  
Bayesian Belief Networks to Integrate Monitoring Evidence of Water Distribution System Contamination, 1825
- Day, Laurence  
*see* Collick, Amy S., 731
- De Cesare, Giovanni  
Circulation in Stratified Lakes due to Flood-Induced Turbidity Currents, 754
- De Girolamo, Paolo  
*see* Panizzo, Andrea, 1872
- de Groot, M. B.  
Liquefaction Phenomena underneath Marine Gravity Structures Subjected to Wave Loads, 1885
- Physics of Liquefaction Phenomena around Marine Structures, 1877
- see* Kudella, M., 1884
- de Kreuk, Merle K.  
Formation of Aerobic Granules with Domestic Sewage, 677
- de la Cruz, Elisa  
*see* de la Cruz, M. Pilar, P.E., 372
- de la Cruz, M. Pilar, P.E.  
Downside Risks in Construction Projects Developed by the Civil Service: The Case of Spain, 372
- De Lorenzis, L.  
*see* Teng, J. G., 198
- de Mendonça, Marcos Barreto  
Column Test Studies of Ochre Biofilm Formation in Geotextile Filters, 896
- de Neufville, Richard  
Real Options by Spreadsheet: Parking Garage Case Example, 1147
- de Oliveira e Sousa, José Luiz Antunes  
Determining the Tensile Stress-Crack Opening Curve of Concrete by Inverse Analysis, 449
- De Roeck, Guido  
*see* Unger, Jörg F., 1606
- de Sanctis, Luca  
Bearing Capacity of Piles Rafts on Soft Clay Soils, 927
- De Silva, Dakshina G.  
Catastrophe-Induced Destruction and Reconstruction, 1924
- De Silva, I. P. D.  
Turbulence Dissipation in Stirred Jars, 567

- de Sousa Coutinho, António G. F.**  
Data Reduction of Horizontal Load Full-Scale Tests on Bored Concrete Piles and Pile Groups, 847
- de Vries, Tonny T.**  
Irrigation Scheduling with Travel Times, 1188
- Dean, Peter K.**  
*see* Johnston, Adrienne R., 1579
- Debaiky, Ahmed S.**  
Residual Tensile Properties of GFRP Reinforcing Bars after Loading in Severe Environments, 226
- Debella, David Col**  
Construction Delivery Systems: A Comparative Analysis of Their Performance within School Districts, 399
- DeBoer, Darrell W., P.E.**  
Combination Subsurface Irrigation and Drainage Systems in North-Central South Dakota, 1169
- Dechert, Tom**  
*see* Brooks, Erin S., 1113
- Deeks, A. J.**  
*see* Doherty, J. P., 16
- Deeks, Andrew J.**  
*see* Zanardo, Giovanna, 162
- Deenadayalu, C.**  
*see* Sharda, J., 62
- Defne, Z.**  
*see* Göğüş, M., 1193
- DeGroot, Don J., ed.**  
GeoCongress 2006: Geotechnical Engineering in the Information Technology Age, 2068
- Deierlein, G. G.**  
*see* Chi, W.-M., 1455  
*see* Kanvinde, A. M., 1627
- Deigaard, Rolf**  
Breaking Antidunes: Cyclic Behavior due to Hysteresis, 993
- DeJong, J. T.**  
*see* Frost, J. D., 13
- DeJong, Jason T.**  
Microbially Induced Cementation to Control Sand Response to Undrained Shear, 905  
*see* DeGroot, Don J., ed., 2068  
*see* Ostendorf, David W., 761
- del Caño, Alfredo, P.E.**  
*see* de la Cruz, M. Pilar, P.E., 372
- Delatte, Norbert**  
*see* Pearson, Cynthia, 1373
- Delatte, Norbert J., ed.**  
*see* Bosela, Paul A., ed., 2066
- Delebarre, Arnaud**  
*see* Yazbek, Waël, 648
- Delfosse-Ribay, Estelle**  
Factors Affecting the Creep Behavior of Grouted Sand, 823
- Demian, Peter**  
Methodology for Usability Evaluation of Corporate Memory Design Reuse Systems, 274
- Demirel, Hüseyin**  
*see* Ustun, Aydin, 1643
- Demirkhan, M. Melih**  
*see* Aydilek, Ahmet H., 869
- Demissie, Misganaw**  
*see* Markus, Momcilo, 1108
- Dempsey, Dwight D.**  
Wood Members Strengthened with Mechanically Fastened FRP Strips, 228
- Dempsey, Kevin M.**  
Dynamic Uplift Scenarios for Floating Ice, 182
- Den, Walter**  
Electrocoagulation of Silica Nanoparticles in Wafer Polishing Wastewater by a Multichannel Flow Reactor: A Kinetic Study, 772
- Denairé, Emmanuel**  
*see* Habel, Katrin, 1615
- Deng, An**  
Metallic Characterization of Foundry By-Products per Waste Streams and Leaching Protocols, 665
- Deng, Xiaolin**  
Evaluating an Electrokinetically Driven Extraction Method for Measuring Heavy Metal Soil Contamination, 641
- Deng, Yong**  
*see* Toutanji, Houssam, 1264
- Denham, S. L.**  
*see* Rafiq, M. Y., 254
- Denoon, Roy O.**  
*see* Burton, Melissa D., 1468
- Dent, Shawn**  
*see* Wright, Leonard T., 1154
- Deo, M. C.**  
*see* Namekar, Shailesh, 1894
- Deodatis, George**  
*see* Koutsourelakis, Phaedon S., 496
- der Kiureghian, A.**  
*see* Moss, R. E. S., 873
- Der Kiureghian, Armen**  
*see* Cetin, K. Onder, 10  
*see* Royset, Johannes O., 445  
*see* Song, Junho, 441  
*see* Song, Junho, 495
- Derome, Dominique**  
Exposure to Condensation Moisture of Sheathing in Retrofitted Leaky Wall Assemblies, 90
- Desai, Chandra S.**  
Parameter Optimization and Sensitivity Analysis for Disturbed State Constitutive Model, 19  
*see* Pradhan, Shashank K., 799
- Descantes, Yannick**  
Automated Measurement of Railway Ballast Angularity, 1331

## AUTHOR INDEX

Diwekar

- Deschamps, Rick  
Limitations in the Back-Analysis of Strength from Failures, 828
- DeSemple, Daniel, P.E.  
Phoenix Rises, 1999
- Deshchowgule, A. D.  
*see* Bapat, J. D., 1310
- Deshmukh, S.  
*see* Moujaes, S. F., 426
- Desmarais, Guylaine  
*see* Derome, Dominique, 90
- DesRoches, Reginald, ed.  
Hurricane Katrina: Performance of Transportation Systems, 2074
- Dessouky, Maged M.  
*see* Kargahi, Mohsen, 1622
- Dessouky, Samer  
Finite-Element Analysis of Hot Mix Asphalt Microstructure using Effective Local Material Properties and Strain Gradient Elasticity, 451
- Detmers, Dana L.  
Remediation of a TCE Plume using a Three-Component Strategy, 1952
- Devengport, Jenny N.  
*see* Hinze, Jimmie, 320
- DeVilbiss, Carl E., P.E.  
Measurement Design Is an Opportunity to Learn, 1917
- Devlin, J. F.  
*see* Garvin, N. L., 776
- DeWolf, John T.  
*see* Lauzon, Robert G., 163
- DeWolf, John T., P.E.  
*see* Chakraborty, Santanu, 179
- Dey, Partha Pratim  
Lateral Distribution of Mixed Traffic on Two-Lane Roads, 1728
- Speed Distribution Curves under Mixed Traffic Conditions, 1713
- Dey, Subhasish  
Control of Scour at Vertical Circular Piles under Waves and Current, 959
- Scour Downstream of an Apron Due to Submerged Horizontal Jets, 957
- Dezi, Luigino  
Effective Slab Width in Prestressed Twin-Girder Composite Decks, 1573
- Dham, Rajesh  
*see* Johnson, Michael C., 1006
- Dhar, Ashutosh S.  
Evaluation of Local Bending in Profile-Wall Polyethylene Pipes, 1762
- Dhawan, A. K.  
*see* Varadarajan, A., 35
- Dhangra, S. L.  
*see* Muralidhar, Bindhu, 1715
- see* Shrivastava, Prabhat, 1718
- see Verma, Ashish, 1788
- di Scalea, Francesco Lanza  
*see* Malta, Fabio, 214
- Libert-DeYoung, Amber  
*see* Abudayeh, Osama, P.E., 246
- DiCaprio, Ralph  
*see* Lakota, Gregory J., P.E., 2037
- Diefenderfer, Brian K.  
Model to Predict Pavement Temperature Profile: Development and Validation, 1679
- Diefenderfer, Stacey D.  
*see* Diefenderfer, Brian K., 1679
- Diekmann, James  
*see* Cho, Young-Jun, 1422
- Dietz, Matthew S.  
Postpeak Strength of Interfaces in a Stress-Dilatancy Framework, 914
- Dikmen, Irem  
*see* Ozorhon, Beliz, 381
- Dilek, Utuk, P.E.  
Nondestructive and Laboratory Evaluation of Damage Gradients in Concrete Structure Exposed to Cryogenic Temperatures, 1368
- Dillard, David A.  
*see* Plaut, Raymond H., 527
- DiLorenzo, Joseph L.  
*see* Litwack, Howard S., 642
- Dilthey, U.  
*see* Schleser, M., 1338
- Dimentberg, M.  
Short-Term Structural Instability under Random Dynamic Loads, 568
- Ding, Duowen  
Nonlinear Stress-Strain Relationship of Soil Reinforced with Flexible Geofibers, 851
- Ding, Xiao-Li  
*see* Chan, Wai-Shan, 1656
- Ding, Yan  
Development and Validation of a Quasi-Three-Dimensional Coastal Area Morphological Model, 1900
- Optimal Control of Open-Channel Flow using Adjoint Sensitivity Analysis, 1055
- Dinwoodie, John  
*see* Fan, Mizi, 518
- Diodato, Nazzareno  
Spatial Uncertainty Modeling of Climate Processes for Extreme Hydrogeomorphological Events Hazard Monitoring, 758
- Diogo, A. Freire  
Optimal Layout of Sewer Systems: A Deterministic versus a Stochastic Model, 1018
- Diplas, Panayiotis  
*see* Almedeij, Jaber H., 1051
- Diwekar, U.  
*see* Shastri, Y., 1820

- Dixon, D.  
*see* Guo, R., 778
- Dixon, Eric R., P.E.  
*see* Noble, Richard M., P.E., 1997
- Djeran-Maigne, Irini  
*see* Delfosse-Ribay, Estelle, 823
- Doby, Troy A.  
*see* Kumar, Sujay V., 1840
- Dodds, Jake  
*see* Cho, Gye-Chun, 832
- Dodds, Robert H., Jr.  
*see* Walters, Matthew C., 435
- D'Odorico, Paolo  
*see* Brandimarte, Luigia, 980
- Doe, Brian E.  
*see* Foutch, Douglas A., 165
- Doeing, Brian J.  
*see* Hu, Henry H., 1080
- Doering, Jay, P.E.  
*see* Clark, Shawn, 941
- Doğ, Sevgi Zeynep  
Determining Attribute Weights in a CBR Model for Early Cost Prediction of Structural Systems, 396
- Dogan, Vedat  
Nonlinear Response of Double-Wall Cylindrical Shell Vibrations under Random Excitation, 63
- Dogrular, O. Y.  
*see* Tufekci, E., 494
- Dogrul, E. C.  
*see* Kavas, M. L., 1099
- Dogrul, Emin C., P.E.  
Flow Computation and Mass Balance in Galerkin Finite-Element Groundwater Models, 1054
- Doh, Young S.  
*see* Kim, Kwang W., 1324
- Doherty, J. P.  
Stiffness of a Flexible Circular Footing Embedded in an Elastic Half-Space, 16
- Doi, Yasuaki  
*see* Hong, Chun-Beom, 1889
- Dominguez, Antonio  
*see* Chinea, Reynaldo R., 1167
- Dong, S. L.  
*see* Yu, T., 233
- Donnell, Eric T.  
Methodology to Develop Median Barrier Warrant Criteria, 1691
- Donnell, Eric T., P.E.  
*see* Pietrucha, Martin T., P.E., 1758
- Donohoe, Stephen  
"Is That Not Horrific?" — or "You Have Been Warned!" *Burchell v. Bullard* and Implications for English Construction Law, 1428
- Dougherty, Mark  
Quantifying Long-Term NPS Pollutant Flux in an Urbanizing Watershed, 643
- Douglas, Ellen M.  
Probabilistic Behavior of Floods of Record in the United States, 1120
- Douglass, Robert D., P.E.  
*see* Anderson, Lee L., Jr., P.E., 1915
- Doveh, Etti  
*see* Gitelman, Victoria, 1668  
*see* Gitelman, Victoria, 1668
- Dowding, C. H.  
Blast and Construction Vibration Monitoring and Control: Thirty-Five-Year Perspective, 1971
- Draper, Stephen E., ed.  
Sharing Water in Times of Scarcity: Guidelines and Procedures in the Development of Effective Agreements to Share Water Across Political Boundaries, 2085
- Drew, Derek S.  
Testing Vickery's Revenue Equivalence Theory in Construction Auctions, 330  
*see* Shen, Li Yin, 384
- Drewes, Jörg E.  
Character of Organic Matter in Soil-Aquifer Treatment Systems, 748
- Drimer, Nitai  
*see* Siassnie, Michael, 1871
- Driver, Robert G.  
Shear Behavior of Corrugated Web Bridge Girders, 1457  
*see* Abbas, Hassan H., 517  
*see* Sause, Richard, 1543
- Drogui, Patrick  
*see* Meunier, Nathalie, 660
- Droste, R. L.  
*see* Shahriari, H., 587
- Drysdale, Robert  
*see* Korany, Yasser, 209
- Drysdale, Robert G.  
*see* El-Dakhakhni, Wael W., 1635
- Duan, Jennifer G.  
Lodging Velocity for an Emergent Aquatic Plant in Open Channels, 1032
- Duarte, Izabel C. D.  
*see* Melo, André L. O., 1652
- Dubina, D.  
*see* Fülop, L. A., 1496
- Ducher, Jean, P.E.  
*see* Kwasniewski, Leslaw, 1391
- Ducoste, Joel J.  
*see* Bohnerova, Zuzana, 760
- Duerr, David, P.E.  
Pinned Connection Strength and Behavior, 1456
- Duffield, Colin F.  
*see* Tang, Wenzhe, 310

## AUTHOR INDEX

Ehrlich

- Dukes, Michael D., P.E.  
Impact of Agriculture on Water Quality in the North Carolina Middle Coastal Plain, 1191
- Dukuze, A.  
*see* Dawe, J. L., 1511
- Duncan, J. Michael  
*see* Brandon, Thomas L., 802
- Dundu, M.  
Plastic and Lateral-Torsional Buckling Behavior of Single Cold-Formed Channels Connected Back-to-Back, 1559
- Dunn, S. L.  
Numerical Modeling of Wave-Induced Liquefaction around Pipelines, 1881
- Dunston, Phillip S.  
*see* Wang, Xiangyu, 280
- Duran, Juan, P.E.  
*see* Yates, J. K., 1436
- Durango-Cohen, Pablo L.  
Using Advanced Inspection Technologies to Support Investments in Maintenance and Repair of Transportation Infrastructure Facilities, 1669
- Durmaz, Mustafa  
Frequency Analysis of Ground Snow Data and Production of the Snow Load Map using Geographic Information System for the Eastern Black Sea Region of Turkey, 1553
- Durmusoglu, Ertan  
Modeling of Settlement in Saturated and Unsaturated Municipal Landfills, 39
- Dusenberry, Donald O., P.E.  
Practical Means for Energy-Based Analyses of Disproportionate Collapse Potential, 1400
- Duveau, G.  
*see* Shao, J. F., 23
- Dye, Jerry  
*see* Fischer, Paul, P.E., 2043
- Dyer, Tom  
*see* Newson, Tim, 792
- Dymond, Randel L.  
*see* Dougherty, Mark, 643
- Dzeng, Ren-Jye  
Identifying a Design Management Package to Support Concurrent Design in Building Wafer Fabrication Facilities, 348
- Dzombak, David A.  
*see* McDonough, Kathleen M., 676
- Eamon, Christopher D.  
*see* Thompson, Michel D., 1626
- Earls, C. J.  
*see* Accord, N. B., 223
- see* Aktas, M., 1544
- see* Chavel, B. W., 112
- see* Chavel, B. W., 113
- Earls, Christopher J. Earls  
*see* Moses, Jonathan P., 143
- Easa, Said M.  
Modeling Driver Visual Demand on Three-Dimensional Highway Alignments, 1700
- Eason, T. G.  
*see* Sagüés, A. A., 161
- East, E. William  
Multiproject Planning and Resource Controls for Facility Management, 416
- Easterbrook, D. J.  
*see* Rafiq, M. Y., 254
- see* Zhou, G. C., 276
- Easterling, W. Samuel  
*see* Nuttayarakul, Nuthaporn, 1501
- Easton, Zachary M.  
*see* Collick, Amy S., 731
- Ebead, Usama  
*see* Aly, Ragi, 217
- Ebead, Usama A. A.  
*see* Zhang, Burong, 29
- Ebeling, Robert M.  
*see* Arroyo-Caraballo, José R., 1150
- Eberhardsteiner, Josef  
*see* Pichler, Bernhard, 913
- Ebewele, R. O.  
*see* Aisien, F. A., 723
- Echegoyen, Luis A.  
*see* Meeroff, Daniel E., 683
- Eckstrom, Richard L.  
Adoption of the International Residential Code in a High Natural Hazards Region — An Overview, 85
- Edelman, Jennifer L.  
*see* Sanayei, Masoud, 172
- Edil, Tuncer B.  
Stabilizing Soft Fine-Grained Soils with Fly Ash, 1291  
*see* Aydilek, Ahmet H., 2
- Edkins, Andrew J.  
Contractual Management in PPP Projects: Evaluation of Legal versus Relational Contracting for Service Delivery, 1415
- Edwards, Marc  
*see* Parks, Jeffrey L., 653
- see* Scardina, Paolo, 664
- Edwini-Bonsu, S.  
Dynamics of Air Flow in Sewer Conduit Headspace, 1009
- Modeling Ventilation Phenomenon in Sanitary Sewer Systems: A System Theoretic Approach, 1008
- Egbert, Jeffery J.  
*see* Rollins, Kyle M., 894
- Egbert, Jeffrey J.  
*see* Rollins, Kyle M., 895
- Eheart, J. Wayland  
*see* An, Hyunhee, 1841
- Ehrlich, Maurício  
*see* de Mendonça, Marcos Barreto, 896

- Eisinger, D. S.**  
*Collecting Driving Data to Support Mobile Source Emissions Estimation*, 1756
- Ekbote, Shailesh**  
*Porochemoelastic Solution for an Inclined Borehole in a Transversely Isotropic Formation*, 510
- Ekenel, Mahmut**  
*Flexural Fatigue Behavior of Reinforced Concrete Beams Strengthened with FRP Fabric and Precured Laminate Systems*, 232
- El Maaddawy, Tamer**  
*Effect of Fiber-Reinforced Polymer Wraps on Corrosion Activity and Concrete Cracking in Chloride-Contaminated Concrete Cylinders*, 202
- El Mezaini, Nasreddin**  
*Effects of Soil-Structure Interaction on the Analysis of Cylindrical Tanks*, 1975
- El Sawwaf, Mostafa**  
*Lateral Resistance of Single Pile Located near Geosynthetic Reinforced Slope*, 901
- El Sherbiny, Ahmed H.**  
*Model for Environmental Risk Assessment of Tourism Project Construction on the Egyptian Red Sea Coast*, 729
- El Wardani, Marwa A.**  
*Comparing Procurement Methods for Design-Build Projects*, 311
- Ela, Wendell P.**  
*see Miller, Jennifer H.*, 732
- Elazouni, Ashraf M.**  
*Classifying Construction Contractors Using Unsupervised-Learning Neural Networks*, 411
- El-Borgi, S.**  
*see Baccouch, M.*, 72
- El-Dakhakhni, Wael**  
*see Ibrahim, Sherif A.*, 1574
- El-Dakhakhni, Wael W.**  
*Multilaminate Macromodel for Concrete Masonry: Formulation and Verification*, 1635  
*see Ibrahim, Sherif A.*, 1575
- El-Diraby, T. E.**  
*see Zhang, J.*, 323
- El-Diraby, Tamer E.**  
*Web-Services Environment for Collaborative Management of Product Life-Cycle Costs*, 318
- Elefteriadou, Lily**  
*see Fang, Fang Clara*, 1732
- Elseit, Pietrucha, Martin T., P.E.**, 1758
- Elgaaly, Mohamed**  
*see Ibrahim, Sherif A.*, 1574
- El-Hamalawi, Ashraf**  
*see Owolabi, Abidemi*, 257
- Elishakoff, Isaac**  
*Four Alternative Definitions of the Fuzzy Safety Factor*, 83
- Elkaim, Gabriel H.**  
*see Gebre-Egziabher, Demoz*, 68
- Ellegaard, Peter**  
*Finite-Element Modeling of Timber Joints with Punched Metal Plate Fasteners*, 1479
- Ellingwood, Bruce R.**  
*see Zureick, Abdul-Hamid*, 1569
- Ellingwood, Bruce R., P.E.**  
*Mitigating Risk from Abnormal Loads and Progressive Collapse*, 1397
- Elliot, William J.**  
*see Brooks, Erin S.*, 1113
- Elliott, Allan**  
*see Mahmood, Talat*, P.E., 715
- Ellis, Ralph D., Jr.**  
*Measuring Project Level Productivity on Transportation Projects*, 319
- Elmarakbi, Ahmed**  
*Crashworthiness of Motor Vehicle and Traffic Light Pole in Frontal Collisions*, 1743
- El-Mashaleh, Mohammad**  
*Firm Performance and Information Technology Utilization in the Construction Industry*, 338
- Elmislami, Tarek**  
*Construction IT Decision Making Using Multiattribute Utility Theory for Use in a Laboratory Information Management System*, 414
- El-Mowafy, A.**  
*Real-Time Determination of Orthometric Heights Accurate to the Centimeter Level using a Single GPS Receiver: Case Study*, 1640
- Elnashai, Amr S.**  
*see Erberik, M.*, Altug, 1925
- El Jeong, Seong-Hoon**, 1585
- El-Ragaby, Amr**  
*see Benmokrane, Brahim*, 126
- El-Rayes, Khaled**  
*see Hyari, Khalied*, 331
- El-Salakawy, Ehab**  
*see Benmokrane, Brahim*, 126
- Elsayed, Mohamed A. K.**  
*see Tieleman, Henry W.*, 1551
- Elseifi, Mostafa**  
*see Loulizi, Amara*, 1725
- Elseifi, Mostafa A.**  
*Viscoelastic Modeling and Field Validation of Flexible Pavements*, 452
- Elshorbagy, Walid**  
*Hydrodynamic Characterization and Modeling of the Arabian Gulf*, 1859  
*see Azam, Mir Hammadul*, 1891  
*see Azam, Mir Hammadul*, 1902

## AUTHOR INDEX

Ezeldin

- Elsworth, Derek**  
Pore Pressure Response Following Undrained uCPT Sounding in a Dilating Soil, 915
- El-Tahawy, Tarek**  
*see* da Silva, Ana Maria Ferreira, 1031
- El-Tawil, Sherif**  
*see* Chao, Shih-Ho, 1556
- El-Tawil, Sherif, P.E.**  
Vehicle Collision with Bridge Piers, 1
- Elton, David J., P.E.**  
*Soils Magic:* Bringing Civil Engineering to the K-12 Classroom, 1417
- El-Zein, Abbas**  
Laplace Boundary Element Model for the Thermoelastic Consolidation of Multilayered Media, 25
- Steady-State Diffusion — Advection by Exponential Finite Elements, 55
- Emam, Emam B.**  
*see* Al-Deek, Haitham M., P.E., 282
- Empie, H. Jeff**  
*see* Campbell, Brian K., 726
- Emsley, Margaret W.**  
*see* Lowe, David J., 362
- Endreny, Theodore**  
*see* Black, Jessica, 1119
- Engel, R.**  
*see* Salem, O., 1980
- Engelhardt, M. O.**  
*see* Dandy, G. C., 1809
- Engelhardt, Michael D.**  
*see* Okazaki, Taichiro, 1557
- see* Okazaki, Taichiro, 1570
- England, Ellen C.**  
*see* Staudinger, Tiffany J., 1146
- Englehardt, James D.**  
*see* Meeroff, Daniel E., 683
- Enjilly, Vahik**  
*see* Fan, Mizi, 518
- Enomoto, Brian T.**  
*see* Newton, Craig M., 1384
- Epstein, Alan**  
*see* Yates, J. K., 1421
- Epstein, Howard I.**  
Virtual Experiments for Welded Structural Steel Connections, 1983
- Erberik, M. Altug**  
Loss Estimation Analysis of Flat-Slab Structures, 1925
- Eremekta, F. Gulen**  
*see* McCue, Terrence Michael, P.E., 720
- Ergas, Sarina J.**  
Evaluation of Water Reuse Technologies for the Textile Industry, 618
- Ergas, Sarina J., P.E.**  
*see* Leshem, Ehud N., 619
- Ergen, Esin**  
*see* Akinci, Burcu, 401
- Erki, M.A.**  
*see* Wight, R. G., 151
- Ersoy, Ugur**  
*see* Canbay, Erdem, 1541
- Ertekin, R. C.**  
*see* Kim, J. W., 1886
- Esaki, Tetsuro**  
*see* Xie, Mowen, 839
- Escobar-Sandoval, Edgard D.**  
Concentrically Loaded Circular Steel Plates Bearing on Plain Concrete, 1614
- Escrivaza, Sharon**  
*see* Abichou, Tarek, 607
- Eskandari-Ghadi, Morteza**  
*see* Xi, Yunping, 561
- Eskicioglu, C.**  
*see* Shahriari, H., 587
- Espinel, Ramon L.**  
*see* Cornejo, Camilo, 1215
- Espinosa, Felipe P.**  
Effects of Local Search Algorithms on Groundwater Remediation Optimization using a Self-Adaptive Hybrid Genetic Algorithm, 278
- Essary, Andrew**  
*see* Lakota, Gregory J., P.E., 2037
- Ettema, Robert**  
Similitude of Large-Scale Turbulence in Experiments on Local Scour at Cylinders, 934
- see* Daly, Steven F., 1011
- see* Michell, Frank, 975
- Ettouney, Mohammed, P.E., ed.**  
Building Integration Solutions, 2053
- Global System Considerations for Progressive Collapse with Extensions to Other Natural and Man-Made Hazards, 1406
- Evans, James W.**  
*see* Green, David W., 1261
- Evans, Jeffrey C.**  
*see* Henning, John T., 892
- Evans, R. O.**  
*see* Jia, Z., 1182
- Evans, Robert O., P.E.**  
*see* Dukes, Michael D., P.E., 1191
- Everett, Jess W., P.E.**  
Natural Attenuation Assessment using Mineral Data, 1968
- Everenden, M. C.**  
Characterization of Unistrut Connection Method with Pultruded Fiber-Reinforced Polymer Channels, 1342
- Exadaktylos, G. E.**  
Freezing — Thawing Model for Soils and Rocks, 1286
- Ezeldin, A. Samer**  
Neural Networks for Estimating the Productivity of Concreting Activities, 353

**Fabbrocino****2006 ASCE TRANSACTIONS****Fabbrocino, G.***see* Prota, A., 210**Fafitis, Apostolos***see* Fuller, Barry J., 2015**Fakhimi, A.**

Shear Banding in Sandstone: Physical and Numerical Studies, 31

**Falcon, Marco A.***see* Sarmiento, Oscar A., 949**Fam, Amir**

Composite T-Beams using Reduced-Scale Rectangular FRP Tubes and Concrete Slabs, 205

*see* Cole, Britton, 204*see* Mandal, Siddhartha, 1483**Fan, Henry S. L.***see* Mak, Chin Long, 1696**Fan, Mizi**

Effect of Test Piece Size on Rheological Behavior of Wood Composites, 518

**Fan, Su-Ling**

Object-Oriented Scheduling for Repetitive Projects with Soft Logics, 291

**Fan, Wei**

Optimal Transit Route Network Design Problem with Variable Transit Demand: Genetic Algorithm Approach, 1667

Using a Simulated Annealing Algorithm to Solve the Transit Route Network Design Problem, 1676

**Fan, Yu-Lin***see* Mo, Y. L., 136**Fang, Dongping**

Safety Climate in Construction Industry: A Case Study in Hong Kong, 345

**Fang, Fang Clara**

Development of an Optimization Methodology for Adaptive Traffic Sign Control at Diamond Interchanges, 1732

**Fang, Hongwei**

Diagonal Cartesian Method for the Numerical Simulation of Flow and Suspended Sediment Transport over Complex Boundaries, 1053

**Fang, Qian**

MS2 Inactivation by Chloride-Assisted Electrochemical Disinfection, 584

**Fang, Sheng-En***see* Ren, Wei-Xin, 1633**Fang, Shenguang***see* Huai, Wenxin, 974**Fang, Shiyue***see* Blatchley, Ernest R., III, 742**Fang, Sunny Ye***see* Juang, C. Hsein, 809**Fang, Xing***see* Cleveland, Theodore G., 1218**Fargier-Gabaldón, Luis B.**

Behavior of Reinforced Concrete Column—Steel Beam Roof Level T-Connections under Displacement Reversals, 1540

**Farhey, Daniel N.***see* Zoghi, Manoochehr, 1390**Faria, José A.***see* Gabriel, Steven A., 1148**Farrow, William C., III***see* Higgins, Christopher, P.E., 173**Faruque, M. A. A.**

Clear Water Local Scour by Submerged Three-Dimensional Wall Jets: Effect of Tailwater Depth, 989

**Farzaneh, Mohamadreza**

Procedures for Calibrating TRANSYT Platoons Dispersion Model, 1722

*see* Rakha, Hesham, 1723**Fashir, H.***see* El-Mowafy, A., 1640**Fedors, Randall W.***see* Woolhiser, David A., 1083**Felippa, Carlos A.**

Construction of Customized Mass-Stiffness Pairs using Templates, 80

**Felt, Deborah R.***see* Hwang, Sangchul, 610**Feng, Cheng-Min***see* Lin, Jen-Jia, 1773**Feng, Wenguo**Sulfur Impregnation on Activated Carbon Fibers through H<sub>2</sub>S Oxidation for Vapor Phase Mercury Removal, 615**Feng, Xue***see* Feng, Wenguo, 615**Fenton, Gordon A.***see* Griffiths, D. V., 54**Fenves, Gregory L.***see* Scott, Michael H., 1462**Fernando, E. G.***see* Oh, Jeong-Ho, 1711**Ferracuti, Barbara***see* Elishakoff, Isaac, 83**Ferreira, Rui Miguel Lage***see* Leal, João Gouveia Aparício Bento, 938**Ferrer, J.***see* Chanona, J., 747**Ferrero, Victor***see* Rinaldi, Victor, 784**Ferro, Vito**

Flood Frequency Analysis for Sicily, Italy, 1082

**Feyen, Jan***see* Rocha, David, 1211**Fickenscher, Peter***see* Shamir, Eylon, 1111

## AUTHOR INDEX

Fox

- Fidell, James  
*see* Barnes, Richard, 239
- Field, Richard, ed.  
BMP Technology in Urban Watersheds: Current and Future Directions, 2052
- Figueroa, J. Ludwig  
*see* Sargand, Shad M., 1746
- Filho, Américo Campos  
*see* Barbieri, Ranier Adonis, 1442
- Filiatrault, André  
Experimental Stiffness and Seismic Response of Panel-Type Steel Storage Rack Connectors, 1987
- Seismic Response of High Voltage Electrical Transformer-Bushing Systems, 1467
- Filz, George M.  
Stability of Long Trenches in Sand Supported by Bentonite-Water Slurry, 4
- Fine, Pinchas  
*see* Gruber, Ellen R., 1282
- Finke, John, ed.  
*see* Cross, Brad, ed., 2092
- Finžgar, Neža  
Advanced Oxidation for Treatment of Aqueous Extracts from EDTA Extraction of Pb and Zn Contaminated Soil, 740
- Fiorino, Luigi  
*see* Corte, Gaetano Della, 1494
- see* Landolfo, Raffaele, 1495
- Fiorotto, Virgilio  
*see* Manso, Pedro A., 3
- Fischer, Paul, P.E.  
Quenching Thornton's Thirst, 2043
- Fiser, Zdenek  
*see* Vondrák, Jiří, 1650
- Fisher, John W.  
*see* Connor, Robert J., 154
- see* Connor, Robert J., 178
- see* Sause, Richard, 1543
- Fisher, Timothy S. R.  
Treatment of Acid Rock Drainage in a Meromictic Mine Pit Lake, 640
- Fiske, Michael R. @Project Chief Technologist  
*see* Bodiford, Melanie P., 2011
- see* Toutanji, Houssam A., P.E., 2010
- Fityus, Stephen  
*see* Huang, Wenxiong, 45
- Fitzgerald, Robert W., P.E.  
*see* Johann, Matthew A., 1369
- Fitzpatrick, Kay, P.E.  
Predicting Speeds in an Urban Right-Turn Lane, 1684
- Flavell, Eric L., P.E.  
Civil Engineering: A Changing Profession, 1918
- Fleetham, Charles  
Leveraging Personality for Business Success, 1921
- Fleetwood, Dennis  
*see* McLean, Amanda, 1945
- Fleischman, Robert B.  
Optimum Arm Geometry for Ductile Modular Connectors, 1510
- Fletcher, H. R.  
Modeling the Sorption of Fluoride onto Alumina, 608
- Flores, Paul  
*see* Scawthorn, Charles, 1929
- Flowers, Stephen G., P.E.  
*see* Flavell, Eric L., P.E., 1918
- Foged, Nathan  
*see* Garcia, Luis A., 1227
- Foliente, Greg C.  
*see* Wang, Chi-hsiang, 1513
- Fong, Patrick Sik-wah  
Exploratory Study of Knowledge Sharing in Contracting Companies: A Sociotechnical Perspective, 380
- Fonseca, Priscilla  
*see* El-Tawil, Sherif, P.E., 1
- Foong, Kok Wai  
*see* Chin, Hoong Chor, 1785
- Foray, P.  
Fluid-Soil-Structure Interaction in Liquefaction around a Cyclically Moving Cylinder, 1882
- see* Damgaard, J. S., 1883
- see* de Groot, M. B., 1877
- Formoso, Carlos T.  
*see* Costa, Dayana B., 1255
- Forsberg, C. W.  
Sustainability and Economics of the Advanced High-Temperature Reactor, 432
- Fortner, Brian  
Landmark Reinvented, 2007
- Short Circuit, 2041
- Fortney, Patrick J.  
Grace under Pressure, 2013
- Fosse, Yann  
*see* Descantes, Yannick, 1331
- Fouad, Fouad H.  
*see* Sisiopiku, Virginia P., 663
- Fouch, Douglas A.  
Investigation of Longitudinal Forces in a Concrete Railroad Trestle, 165
- see* Lee, Kihak, 1583
- Fox, G. A.  
Sediment Transport Model for Seepage Erosion of Stream Bank Sediment, 1133
- Fox, James F.  
*see* Krou, Jean F., 733
- Fox, Patrick J.  
*see* Qiu, Tong, 523
- Fox, Peter  
*see* Park, Heekyung, 762

- Foye, K. C.  
Assessment of Variable Uncertainties for Reliability-Based Design of Foundations, 888
- Resistance Factors for Use in Shallow Foundation LRFD, 889
- Fragiacomo, Massimo  
Long-Term Behavior of Timber-Concrete Composite Beams. I: Finite Element Modeling and Validation, 1440
- Long-Term Behavior of Timber-Concrete Composite Beams. II: Numerical Analysis and Simplified Evaluation, 1441
- Franchin, Paolo  
*see* Lupoi, Giorgio, 473
- Francisca, Franco M.  
*see* Rinaldi, Victor A., 704
- Frangopol, Dan M.  
*see* Biondini, Fabio, 1521
- see* Liu, Min, 1620
- see* Liu, Ming, 167
- see* Neves, Luís A. C., 1537
- see* Neves, Luís A. C., 1619
- see* Sakano, Masahiro, 171
- Frank, Karl H.  
*see* Chung, Hsin-Yang, 134
- Frantzis, Panagiotis  
Effect of Early-Age Temperature Rise on the Stability of Rapid-Hardening Cement Fiber Composites, 1325
- Fratta, Dante, ed.  
*see* Puppala, Anand J., ed., 2087
- Fredette, Thomas  
*see* Lyons, Terrence, 639
- Fredlund, Delwyn G.  
Unsaturated Soil Mechanics in Engineering Practice, 807
- see* Miller, Gerald A., ed., 2096
- Fredsøe, Jørgen  
*see* Dey, Subhashish, 959
- see* Sumer, B. Mutlu, 1879
- see* Sumer, B. Mutlu, 1880
- French, Catherine  
*see* Zhao, Jian, 1584
- French, Richard  
*see* Duan, Jennifer G., 1032
- Frevert, D. K.  
*see* Salas, J. D., 1177
- Frevert, Donald  
Watershed and River Systems Management Program: Overview of Capabilities, 1174
- Frevert, Donald K.  
*see* Singh, Vijay P., 1175
- Frey, Aimee  
*see* Cox, Robert F., 303
- Fries, J. Stephen  
Attachment of Fecal Indicator Bacteria to Particles in the Neuse River Estuary, N.C., 736
- Frigione, M.  
Environmental Effects on Epoxy Adhesives Employed for Restoration of Historical Buildings, 1344
- Fritsen, Chris  
*see* Kish, Suzanne M., 739
- Fritz, Wolfgang U.  
*see* Merry, Scott M., 829
- Fritzges, Michael B.  
*see* DeLong, Jason T., 905
- Fröhner, A.  
*see* Wöhling, Th., 1206
- Fromion, V.  
*see* Litrico, X., 1204
- see* Litrico, X., 1205
- Frost, David, ed.  
*see* DeGroot, Don J., ed., 2068
- Frost, J. D.  
Analytical Investigation of Friction Sleeve Length Effects on Stratigraphic Interpretation, 13
- Fruchter, Renate  
*see* Demian, Peter, 274
- Fu, Chung C.  
*see* Zhao, Tong, 350
- Fu, Gongkang  
*see* Mu, Bin, 196
- see* Wu, Hwai-Chung, 147
- Fu, Hai-Feng  
*see* Xing, Hao-Feng, 849
- Fu, Jin-Cheng  
*see* Hsu, Ming-Hsi, 992
- Fujino, Yozo  
*see* Ritidumrongkul, Sopon, 1469
- see* Xia, Yong, 463
- Fukuchi, Tsugio  
Hydraulic Elements Chart for Pipe Flow using New Definition of Hydraulic Radius, 1030
- Fukuoka, Hiroshi  
*see* Gratchev, Ivan B., 790
- Fuller, Barry J.  
The Paper Alternative, 2015
- Fülop, L. A.  
Design Criteria for Seam and Sheeting-to-Framing Connections of Cold-Formed Steel Shear Panels, 1496
- Fulp, Terrance  
*see* Frevert, Donald, 1174
- Fulp, Terrance J.  
*see* Carron, John C., 1176
- Fulp, Terry J.  
*see* Prairie, James R., 1110
- Fung, Ivan W. H.  
*see* Lo, Tommy Y., 352
- Fung, Tat Ching  
*see* Nguyen, Ngoc T. B., 1600

## AUTHOR INDEX

Gates

- Furman, A.  
Modified Kostiakov Infiltration Function: Accounting for Initial and Boundary Conditions, 1230
- Furuta, Hitoshi  
*see* Sakano, Masahiro, 171
- Fwa, T. F.  
Transverse Pavement Grooving against Hydroplaning. I: Design, 1710  
*see* Ong, G. P., 1709
- Fyfe, J.  
*see* Shang, J. Q., P.E., 1277
- Gabr, M. A.  
*see* Warren, K. A., 880
- Gabriel, Steven A.  
Contingency Planning in Project Selection using Multi-objective Optimization and Chance Constraints, 1148
- Statistical Modeling to Forecast Odor Levels of Biosolids Applied to Reuse Sites, 652
- Gadhamskhetty, V.  
Improving Air-Cooled Condenser Performance in Combined Cycle Power Plants, 429
- Galal, Ahmed  
*see* Kupferle, Margaret J., P.E., 656
- Gali, Veeresh S.  
Biodegradation of Phenol with Wastewater as a Cosubstrate in Upflow Anaerobic Sludge Blanket, 759
- Gallagher, Patricia M.  
*see* Grubb, Dennis G., 830
- see* Grubb, Dennis G., 831
- Gallagher, Thomas W., P.E.  
*see* Thuman, Andrew J., P.E., 719
- Galloway, Patricia D., P.E.  
Comparative Study of University Courses on Critical-Path Method Scheduling, 358
- Survey of the Construction Industry Relative to the use of CPM Scheduling for Construction Projects, 357
- Galsworthy, Jon  
*see* Kijewski-Correa, Tracy, 1588
- Galvão, T. C. Brito  
*see* Mendonça, A. A., 1276
- Gambatese, John  
*see* Pocock, James B., 325
- Ganapathi, M.  
Influence of Functionally Graded Material on Buckling of Skew Plates under Mechanical Loads, 528
- GangaRao, Hota V. S.  
*see* Laosiriphong, Krit, 153
- see* Prachasaree, Woraphot, 146
- Gangopadhyaya, S.  
*see* Dey, Partha Pratim, 1713
- see* Dey, Partha Pratim, 1728
- Gao, Bin  
*see* Collick, Amy S., 731
- Gao, C. K.  
*see* Lai, C. H., 1942
- Gao, Fuping  
Improved Analysis Method for Wave-Induced Pipeline Stability on Sandy Seabed, 1727
- Gao, Zhili  
Approaches to Improving the Quality of Construction Drawings from Owner's Perspective, 405
- Gara, Fabrizio  
*see* Dezi, Luigino, 1573
- Garavaglia, E.  
Probabilistic Model for the Assessment of Historic Buildings under Permanent Loading, 1361
- Garber, Nicholas J.  
Safety Impacts of Differential Speed Limits for Trucks and Passenger Cars on Rural Interstate Highways: A Modified Empirical Bayes Approach, 1665
- Garbrecht, Jurgen D.  
Comparison of Three Alternative ANN Designs for Monthly Rainfall-Runoff Simulation, 1122
- Garcia, Camilo  
Using GPS to Measure the Impact of Construction Activities on Rural Interstates, 339
- Garcia, Luis A.  
Development of GIS-Based Model to Estimate Relative Reductions in Crop Yield due to Salinity and Waterlogging, 1227
- García, Marcelo H.  
*see* Cataño-Lopera, Yovanni, 1897
- see* León, Arturo S., 1010
- García-Navarro, P.  
*see* Pérez, G., 977
- Gardner, Douglas J.  
*see* Cassidy, Eric D., 1453
- Gardon, Paolo  
*see* Ramamoorthy, Sathish K., 1593
- Garnica, Paul  
*see* Rojas, Eduardo, 44
- Garonia, Temesgen, P.E.  
Oxidation of Methyl *Tert*-Butyl Ether in Aqueous Solution by an Ozone/UV Process, 743
- Garrett, Brian H.  
*see* Rollins, Kyle M., 894
- see* Rollins, Kyle M., 895
- Garvin, N. L.  
Minimizing Mass Transfer Effects in Granular Iron Batch Tests Using GEM Reactors, 776
- Gasparini, D. A.  
Battery-Joralemon Street Tunnel, 1374
- Time-Dependent Behavior of Posttensioned Wood Howe Bridges, 1480
- see* Dai, H., 464
- Gassman, Sarah L.  
*see* Leon, Evangelia, 811
- Gastal, Francisco de Paula Simões Lopes  
*see* Barbieri, Ranier Adonis, 1442
- Gates, Timothy K.  
*see* Burkhalter, J. Philip, 1166
- see* Wittler, James M., 1213

- Gavin, Henri P.  
*see* Alhan, Cenk, 504
- Gazzola, Fabio  
*see* Lee, Marcus M. K., 1545
- Ge, Hanbin  
*see* Chen, Zhiyi, 1486
- Ge, Zhi  
*see* Wang, Kejin, 1302
- Gebken, Richard J., II  
 Quantification of Costs for Dispute Resolution Procedures in the Construction Industry, 1429
- Geblawi, Omar  
*see* Tabsh, Sami W., 1973
- Gebre-Egziabher, Demoz  
 Calibration of Strapdown Magnetometers in Magnetic Field Domain, 68
- Gee, Glendon W.  
*see* Albright, William H., 906
- Geem, Zong Woo  
 Parameter Estimation for the Nonlinear Muskingum Model using the BFGS Technique, 1217
- Gellner, W. James, II  
 Hydraulic Conductivity of Soil Sorptive Zones Created by In Situ Injection of a Cationic Surfactant, 773
- Genaidy, A.  
*see* Salem, O., 1256
- Georgakakos, Konstantine P.  
*see* Shamir, Eylon, 1111
- Ger, A. Metin  
*see* Aydin, Ismail, 1029
- Gerba, Charles P.  
*see* Song, Inhong, 725
- Gergely, Janos, P.E.  
*see* Stiller, William B., P.E., 142
- Gerhart, Phil C., P.E.  
*see* Noble, Richard M., P.E., 1997
- Germaine, John T.  
*see* Santagata, Marika, 810
- Gettu, Ravindra  
*see* de Oliveira e Sousa, José Luiz Antunes, 449  
*see* Sena Cruz, José M., 218
- Getz, Daniel R.  
 Static and Cyclic Racking Performance of Autoclaved Aerated Concrete Cladding Panels, 86
- Geurink, Jeffrey S.  
 Time-Step Dependency of Infiltration Errors in the HSPF Model, 1102
- Ghaboussi, Jamshid  
*see* Hashash, Youssef M. A., P.E., 872
- Ghaemian, Mohsen  
*see* Sheibany, Farrokh, 487
- Ghahramani, A.  
*see* Johari, A., 840
- Ghani, A. Ab  
*see* Sinnakaudan, S. K., 983
- Gharaibeh, Nasir G., P.E.  
 Decision Methodology for Allocating Funds across Transportation Infrastructure Assets, 1137
- Ghassemi, A.  
 Poroelastic Analysis of the Response of a Stationary Crack using the Displacement Continuity Method, 437
- Ghassemi, Ahmad  
*see* Kumar, G. Suresh, 1106
- Ghataora, Gurmel S.  
*see* Poh, H. Y., 1285
- Ghazireh, Nizar  
*see* Poh, H. Y., 1285
- Ghidaoui, M. S.  
*see* Nixon, W., 1025
- Ghidaoui, Mohamed S.  
*see* León, Arturo S., 1010
- Ghionna, Vito Nicola  
 Liquefaction Resistance of Undisturbed and Reconstituted Samples of a Natural Coarse Sand from Undrained Cyclic Triaxial Tests, 797
- Gholston, Sampson E.  
*see* Anderson, Michael D., 1784
- Ghosh, Ambarish  
 Leaching of Lime from Fly Ash Stabilized with Lime and Gypsum, 1273
- Tensile Strength Bearing Ratio and Slake Durability of Class F Fly Ash Stabilized with Lime and Gypsum, 1263
- Ghosh-Dastidar, Samanwoy  
 Neural Network-Wavelet Microsimulation Model for Delay and Queue Length Estimation at Freeway Work Zones, 1697
- Ghosn, Michel  
*see* Ali-Ahmad, Mohamad, 530  
*see* Wang, Jian, 1582
- Giancaspro, James  
 Use of Inorganic Polymer to Improve the Fire Response of Balsa Sandwich Structures, 1303
- Giang, Geneva  
*see* Hinze, Jimmie, 320
- Giannuzzi, Leda  
*see* Caravelli, Alejandro, 713
- Gibson, G. Edward, Jr.  
 What is Preproject Planning, Anyway?, 1241
- Gibson, G. Edward, Jr., P.E.  
*see* Matthews, Benjamin, 1259
- Gibson, G. Edward, P.E.  
*see* Gebken, Richard J., II, 1429
- Gibson, Ronald F.  
*see* Mu, Bin, 196  
*see* Wu, Hwai-Chung, 147
- Gigliotti, Rosario  
*see* Braga, Franco, 1577

## AUTHOR INDEX

Goudar

- Gil, A. J.**  
Parallel Multigrid Detached Eddy Simulation Algorithm for Three-Dimensional Unsteady Incompressible Flows on Unstructured Meshes, 82
- Gilbert, R. Ian**  
*see* Wang, Tao, 1601
- Gillman, Kevin**  
*see* Balling, Richard J., 1552
- Ginestet, Philippe**  
*see* Rivero, Jesús A. Cacho, 670
- Girand, Matthew**  
*see* Gellner, W. James, II, 773
- Girish, J.**  
Thermomechanical Postbuckling Analysis of Cross-Ply Laminated Cylindrical Shell Panels, 448
- Gitelman, Victoria**  
Screening Tools for Considering Grade Separation at Rail-Highway Crossings, 1668
- Giunta, Ugo**  
*see* Ignaccolo, Matteo, 1789
- Giussani, Francesca**  
Service-Stage Analysis of Curved Composite Steel-Concrete Bridge Beams, 1629
- Gjelsvik, Atle**  
*see* Smyth, Andrew W., 493
- Gladke, Joseph R., P.E.**  
*see* Shane, Jennifer S., 1906
- Glagola, Charles R.**  
*see* Minchin, R. Edward, Jr., 1242
- Glass, J.**  
*see* Soetanto, R., 316
- Godka, K.**  
Optimal Seismic Design Considering Risk Attitude, Societal Tolerable Risk Level, and Life Quality Criterion, 1639
- Godinot, Myriam**  
*see* Chua, David K. H., 294
- Godoy, Luis A.**  
Differences between Experts and Novices in the Review of Engineering Journal Papers, 1409
- Godrej, Adil N.**  
*see* Dougherty, Mark, 643
- Goel, Amit**  
*see* Gupta, Rajiv, 1311
- Goel, Prem K.**  
*see* Jiang, Zhuojun, 1719
- Goel, Ramesh K.**  
Evaluation of a Sludge Yield and Phosphorus Removal in a Cannibal Solids Reduction Process, 735
- Goel, Subhash C.**  
*see* Parra-Montesinos, Gustavo J., 1571
- Goel, Sudha**  
Health Risk Assessment for a Contaminated Site: A Case Study, 1964
- Göögüs, M.**  
Broad-Crested Weirs with Rectangular Compound Cross Sections, 1193
- Gokhale, Sanjiv**  
Deployment of Fiber Optic Networks through Underground Sewers in North America, 1737
- Goktepe, A. Burak**  
Role of Learning Algorithm in Neural Network-Based Backcalculation of Flexible Pavements, 287
- Goldfeld, Yiska**  
Elastic Buckling of Laminated Conical Shells Using a Hierarchical High-Fidelity Analysis Procedure, 575
- Gonçalves, Roberto Martins**  
*see* Chodrau, Gustavo Monteiro de Barros, 1503
- Gong, Xiao-Nan**  
*see* Xing, Hao-Feng, 849
- Gong, Yanglin**  
*see* Xu, Lei, 1466
- Gonzales, James**  
*see* Everett, Jess W., P.E., 1968
- González-Altozano, Pablo**  
*see* Palau-Salvador, Guillermo, 1224
- Goodlings, D. J.**  
*see* Han, S. J., 786
- Goodman, Alvin S**  
Infrastructure Planning Handbook -- Planning, Engineering, and Economics, 2075
- Gopalakrishnan, Kashurirangan**  
Assessing Damage to Airport Pavement Structure due to Complex Gear Loads, 1761
- Gopalakrishnan, S.**  
*see* Sasmal, Saptarshi, 1392
- Gorantiwar, S. D.**  
*see* Smout, I. K., 1203
- Gorantiwar, Sunil D.**  
Performance-Based Optimization of Land and Water Resources within Irrigation Schemes. I: Method, 1201  
*see* Smout, Ian K., 1202
- Goren, Yitzhak D.**  
*see* Telem, Dory, 299
- Gorman, Thomas M., P.E.**  
*see* Green, David W., 1261
- Goswami, Arkopal K.**  
*see* Miller, John S., P.E., 1674
- Goto, Yoshiaki**  
Change of Weld Residual Stresses due to Loss of Material, 1630
- Stability and Ductility of Thin-Walled Circular Steel Columns under Cyclic Bidirectional Loading, 1599**
- Gotoh, Keinosuke**  
*see* Watanabe, Kohei, 1781
- Goudar, Chetan T.**  
*see* Sonnad, Jagadeesh R., 1017

- Gourvenec, Susan**  
Undrained Bearing Capacity of Square and Rectangular Footings, 27
- Gourves, Roland**  
*see* Breul, Pierre, 787
- Gouvenot, Daniel**  
*see* Delfosse-Ribay, Estelle, 823
- Graber, Ellen R.**  
Soil Stabilization in Semiarid and Arid Land Agriculture, 1282
- Graber, S. David**  
Asymmetric Flow in Symmetric Supercritical Expansions, 953
- Grace, Robert A.**  
Considerations for Storm-Water Outfalls off Exposed Coasts, 1233
- Hybrid Course Linking Natural Hazards with Probability and Statistics, 1425
- Graham, Nigel J. D.**  
*see* Campos, Luiza C., 697  
*see* Campos, Luiza C., 698
- Graham, Randall, P.E., ed.**  
Examining the Confluence of Environmental and Water Concerns, 2065
- Graham, Samuel**  
*see* Higgs, C. Fred, III, 1418
- Grammatikopoulou, A.**  
General Formulation of Two Kinematic Hardening Constitutive Models with a Smooth Elastoplastic Transition, 41
- Gransberg, Douglas D.**  
*see* Shane, Jennifer S., 1906
- Gransberg, Douglas D., P.E.**  
Preparing for Design-Build Projects: A Primer for Owners, Engineers, and Contractors, 2081
- Grant, S. R.**  
*see* Tai, C. S., 669
- Gratchev, Ivan B.**  
How Reliable is the Plasticity Index for Estimating the Liquefaction Potential of Clayey Sands?, 790
- Graveto, Victor M.**  
*see* Diogo, A. Freire, 1018
- Grayman, Walter M.**  
Locating Monitors in Water Distribution Systems: Red Team-Blue Team Exercise, 1832
- see* Guan, Jiabao, 1827
- Grazzini, Alessandro**  
*see* Antonaci, Paola, 1334
- Greco, Venanzio R.**  
Active Thrust Due to Backfill Subject to Lines of Surcharge, 805
- Green, David W.**  
Mechanical Grading of Round Timber Beams, 1261
- Green, Jacklyn R.**  
*see* Perko, Howard A., P.E., 73
- Green, Mark F.**  
*see* MacDougall, Colin, 135
- Green, Perry S.**  
Strength and Stiffness of Conventional Bridging Systems for Cold-Formed Cee Studs, 1493  
*see* Yazdani, Nur, 1990
- Grégori, Gérald**  
*see* Blatchley, Ernest R., III, 742
- Gremann, Blair**  
Movement of Finite Amplitude Sediment Accumulations, 1003
- Greuel, Andreas, P.E.**  
*see* Jones, Jason, P.E., 2012
- Grierson, Donald E., ed.**  
*see* Charney, Finley A., ed., 2044  
*see* Xu, Lei, 1466
- Griesmer, Stacey K.**  
*see* Fleetham, Charles, 1921
- Griffin, Erin P.**  
*see* Kurup, Pradeep U., P.E., 272  
*see* Kurup, Pradeep U., P.E., 882
- Griffin, Ronald C.**  
Achieving Water Use Efficiency in Irrigation Districts, 1846
- Griffith, Jason**  
*see* Spielholz, Peregrin, 393
- Griffiths, D. V.**  
Undrained Bearing Capacity of Two-Strip Footings on Spatially Random Soil, 54
- Grigg, Neil S.**  
Condition Assessment of Water Distribution Pipes, 1151
- Griggs, Francis E., Jr.**  
Development of the Vertical Lift Bridge: Squire Whipple to J. A. L. Waddell, 1872-1917, 168
- Grigoriu, Mircea**  
Evaluation of Karhunen-Loéve, Spectral, and Sampling Representations for Stochastic Processes, 453
- Galerkin Solution for Linear Stochastic Algebraic Equations, 570
- Grigoropoulos, Sotirios G., P.E.**  
*see* Manariotis, Ioannis D., 585
- Grimes, George Avery, P.E.**  
Cost-Effectiveness of Railway Infrastructure Renewal Maintenance, 1729
- Grino, L.**  
*see* Abuel-Naga, H. M., 862
- Grizzard, Thomas J., Jr.**  
*see* Dougherty, Mark, 643
- Grosenbaugh, Mark**  
*see* Han, Seon, 1898
- Gross, Christoph M., ed.**  
*see* Wilshire, Richard L., ed., 2070
- Grosskopf, K. R.**  
Assessing the Financial Feasibility of Utility-Provided Backup Power during Project Site Planning, 419
- Grotmaack, Rike**  
Wave Forcing of Small Floating Bodies, 1874

## AUTHOR INDEX

Gutierrez

- Grubb, Dennis G.  
Field Evaluation of Crushed Glass – Dredged Material Blends, 831
- Laboratory Evaluation of Crushed Glass–Dredged Material Blends, 830
- Gu, Chao  
*see* Zhong, Hongzhi, 491
- Gu, Qiang  
*see* Guo, Bing, 1572
- Guadagnini, Maurizio  
Shear Resistance of FRP RC Beams: Experimental Study, 235
- Guaita, M.  
*see* Vidal, P., 542
- Guan, Jiabao  
Identification of Contaminant Sources in Water Distribution Systems using Simulation – Optimization Method: Case Study, 1827
- Guan, Yousheng  
*see* Blatchley, Ernest R., III, 742
- Guaraglia, Dardo O.  
Decreasing Measuring Errors of a Thermal Ground-water Flowmeter, 1195
- Gudina, S.  
Physical Response of Geomembrane Wrinkles Overlying Compacted Clay, 902
- Guganesharajah, K.  
Influence of Uncertainties in the Estimation Procedure of Floodwater Level, 1036
- Guggemos, Angela Acree  
Decision-Support Tool for Assessing the Environmental Effects of Constructing Commercial Buildings, 102
- see* Junnila, Seppo, 1138
- Guichon, Martín  
*see* Rinaldi, Victor, 784
- Guler, Goknil  
Evaluation of the Movements of the Dam Embankments by Means of Geodetic and Geotechnical Methods, 1645
- Guler, Murat  
*see* Kutay, M. Emin, 777
- Günadin, H. Murat  
*see* Doğ, Sevgi Zeynep, 396
- Gunaratna, Nilupa  
*see* Blatchley, Ernest R., III, 742
- Gunawan, Lukito  
*see* Guralnick, Sidney A., 1991
- Guo, Bing  
Experimental Behavior of Stiffened and Unstiffened End-Plate Connections under Cyclic Loading, 1572
- Guo, James C. Y.  
Design of Street Curb Opening Inlets using a Decay-Based Clogging Factor, 1057
- Storm-Water Predictions by Dimensionless Unit Hydrograph, 1210
- Guo, Kelu  
*see* Minchin, R. Edward, Jr., 1242
- Guo, R.  
Thermohydromechanical Modeling of a Full-Scale Tunnel Sealing Clay Bulkhead, 778
- Guo, Shenglian  
*see* Peng, Dingzhi, 1087
- Guo, Shwu-Ping  
*see* Hsu, Chaug-Ing, 1799
- Guo, W. H.  
Safety Analysis of Moving Road Vehicles on a Long Bridge under Crosswind, 478
- Guo, Wei Dong, ed.  
*see* Parsons, Robert L., ed., 2067
- Guo, Yukun  
*see* Cuthbertson, Alan J. S., 1034
- Guo, Yiping  
Climate Model Simulation of Point Rainfall Frequency Characteristics, 1127
- Updating Rainfall IDF Relationships to Maintain Urban Drainage Design Standards, 1123
- see* Quader, Asif, 1075
- Guo, Yurong  
*see* Shan, Bo, 219
- Gupta, Abhinav  
*see* Wirgau, Scott, 271
- Gupta, Ajay  
*see* Reddy, B. V. Venkatarama, 1265
- see* Reddy, B. V. Venkatarama, 1313
- Gupta, Ajay Kumar  
Uncertainty Analysis of Conventional Water Treatment Plant Design for Suspended Solids Removal, 744
- Gupta, Mahesh Chandra  
*see* Bhaduria, Sudhir Singh, 1377
- Gupta, Rajiv  
New Static Sunshade Design for Energy-Efficient Buildings, 422
- Prediction of Concrete Strength using Neural-Expert System, 1311
- Gupta, Rakesh  
*see* van de Lindt, John W., 1381
- Guralnick, Sidney A.  
Strengthening of Reinforced Concrete Bridge Columns with FRP Wrap, 1991
- Gurian, Patrick L.  
*see* Gharaibeh, Nasir G., P.E., 1137
- Gurol, Mirat D.  
*see* Garoma, Temesgen, P.E., 743
- Guthrie, W. Spencer  
*see* Hermansson, Åke, 180
- Gutiérrez, Alvaro  
Determination of Atterberg Limits: Uncertainty and Implications, 816
- Gutierrez, Gene  
*see* Rollings, Raymond S., 1370

- Guyader, Andrew C.**  
*Determining Equivalent Linear Parameters for Use in a Capacity Spectrum Method of Analysis*, 1445
- Guza, Olga**  
*see Lyons, Terrence*, 639
- Ha, Tam Thuc, P.E.**  
*Nonconstrained Flagpole Design Formula*, 1454
- Haas, Carl T.**  
*see Beheiry, Salwa M. A.*, 326
- Haar, Brandenburg, Stefanie G.**, 1248
- Haas, Carlos H.**, 361
- Haas, Changwan, Kim**, 262
- Haas, Jongchul, Song**, 378
- Haas, Issam M., Srour**, 392
- Haas, Issam M., Srour**, 402
- Habel, Katrin**  
*Structural Response of Elements Combining Ultra-high-Performance Fiber-Reinforced Concretes and Reinforced Concrete*, 1615
- Habib, Emad H.**  
*Stage-Discharge Relations for Low-Gradient Tidal Streams using Data-Driven Models*, 979
- Habibagahi, G.**  
*see Johari, A.*, 840
- Hackley, S.**  
*see Kavvas, M. L.*, 1099
- Haehnel, R.**  
*see Shoop, S.*, 857
- Hag-Elsafi, Osman**  
*see Wattanadechachan, Prapun*, 149
- Hager, Willi H.**  
*see Kramer, Kristian*, 1023
- Hager, Willi H.**  
*see Pagliara, Stefano*, 976
- Hager, Willi H.**  
*see Pfister, Michael*, 1014
- Hager, Willi H.**  
*see Unger, Jens*, 966
- Hager, Willi H.**  
*see Zweifel, Andreas*, 1888
- Hahn, Daniel E., P.E.**  
*Overture to Omaha*, 2024
- Haidar, Khalil**  
*see Turcet, Philippe*, 1266
- Hairstans, Robert**  
*see Kermani, Abdy*, 1617
- Haj-Ali, Rami**  
*Multiscale Nonlinear Framework for the Long-Term Behavior of Layered Composite Structures*, 577
- Hajela, Prabhat**  
*Optimal Design in the Presence of Modeling Uncertainties*, 77
- Hajj, Muhammad R.**  
*see Tielemans, Henry W.*, 1551
- Hakkert, A. Shalom**  
*see Gitelman, Victoria*, 1668
- Hall, John F.**  
*see Krishnan, Swaminathan*, 470
- Hall, John F.**  
*see Krishnan, Swaminathan*, 471
- Halley, James M., P.E.**  
*see Schaad, David E.*, 738
- Halling, Marvin W.**  
*see Pulngern, Tawich*, 1517
- Halling, Marvin W., P.E.**  
*see Hsieh, Kai H.*, 174
- Ham, H.**  
*see Baskaran, A.*, 100
- Hamad, Bilal S.**  
*Comparison of Roles of FRP Sheets, Stirrups, and Steel Fibers in Confining Bond Critical Regions*, 222
- Hamada, Masanori**  
*see Ashford, Scott A.*, 793
- Haman, Dorota Z.**  
*see Cornejo, Camilo*, 1215
- Hamburger, Ronald O., S.E.**  
*see Dusenberry, Donald O.*, 1400
- Hamlet, Alan F.**  
*see McGuire, Marketa*, 1811
- Hammer, Kevin**  
*see Vallejo, Luis E.*, 56
- Han, Feng**  
*see Wang, Cheng-Der*, 12
- Han, Jen-Yu**  
*Stepwise Parameter Estimations in a Time-Variant Similarity Transformation*, 1660
- Han, Jie, P.E., ed.**  
*Advances in Earth Structures — Research to Practice*, 2045
- Han, Jie, P.E., ed.**  
*General Analytical Framework for Design of Flexible Reinforced Earth Structures*, 909
- Han, Hong, Zhenshen**, 833
- Han, S. C.**  
*Nine-Node Resultant-Stress Shell Element for Free Vibration and Large Deflection of Composite Laminates*, 69
- Han, S. J.**  
*Practical Model of Frost Heave in Clay*, 786
- Han, Seon**  
*Modeling of Seabed Interaction of Oceanographic Moorings in the Frequency Domain*, 1898
- Hancock, Gregory J.**  
*see Yang, Demao*, 1492
- Handy, R. L.**  
*Stress Zones Near Displacement Piers: I. Plastic and Liquefied Behavior*, 782
- Handy, R. L.**  
*Stress Zones near Displacement Piers: II. Radial Cracking and Wedging*, 783
- Hanna, Adel M.**  
*Drag Force on Single Piles in Clay Subjected to Surcharge Loading*, 20
- Hanna, Awad S., P.E.**  
*see Menches, Cindy L.*, 415
- Hanna, Awad S., P.E.**  
*see Menches, Cindy L.*, 417
- Hansen, Niels-Erik Ottesen**  
*see Sumer, B. Mutlu*, 1879

## AUTHOR INDEX

Hattis

- Hanson, James L., P.E.  
*see* Elton, David J., P.E., 1417
- Hantush, Mohamed M.  
*see* Kalin, Latif, 1128
- Haneus, Jörgen  
*see* Almqvist, Helena, 700
- Hao, Hong  
*see* Zanardo, Giovanna, 162
- Hapij, Adam, P.E.  
*see* Ettouney, Mohammed, P.E., 1406
- Harada, Hideki  
*see* Tandukar, Madan, 601
- Harajli, M. H.  
Strengthening of Interior Slab — Column Connections using a Combination of FRP Sheets and Steel Bolts, 229
- Harder, Leslie F., Jr.  
*see* Cetin, K. Onder, 10
- Harding, Anthony  
*see* Lowe, David J., 362
- Hargrove, S. Keith  
*see* Ding, Duowen, 851
- Harik, I. E.  
*see* Alagusundaramoorthy, P., 141
- Harjes, D.  
*see* Shoop, S., 857
- Harmon, Kathleen M. J.  
The Effective Mediator, 1435
- Haroon, Saif  
Posttensioned Anchorage Zone Enhancement with Fiber-Reinforced Concrete, 159  
*see* Yazdani, Nur, P.E., 1362
- Haroon, Saif A.  
*see* Yazdani, Nur, 1990
- Haroon, Saif Abdullah  
Hurricane Mitigation of the Florida House Learning Center, 1382
- Harper, Colin  
*see* Owolabi, Abidemi, 257
- Harper, Willie F., Jr., P.E.  
*see* Yi, Taewoo, 757
- Harries, Kent A.  
Debonding- and Fatigue-Related Strain Limits for Externally Bonded FRP, 197  
*see* Aidoo, John, 138
- see* Eckstrom, Richard L., 85
- see* Moses, Jonathan P., 143
- Harrington, Gregory W.  
*see* Xagorarakis, Irene, 692
- Harris, Kevin L., P.E.  
*see* Dettmers, Dana L., 1952
- Harrison, Andrew, P.E.  
*see* Rushing, John F., 1394
- Hart, Brian K.  
*see* Newcombe, Remembrance L., 583
- Hart, Bud  
*see* Fischer, Paul, P.E., 2043
- Hart, David B.  
*see* McKenna, Sean A., 1833
- Hart, William E.  
*see* Berry, Jonathan, 1823
- Harter, Thomas  
*see* Marques, Guilherme F., 1849
- Hartt, William  
*see* Suarez, Jorge, 1327
- Harvey, John T.  
*see* Lee, Eul-Bum, 334
- Harvey, John T., P.E.  
*see* Lee, Eul-Bum, P.E., P.M.P., 1752
- Haselbach, Liv M.  
*see* Valavala, Srinivas, 1098
- Hashash, Y. M. A.  
*see* Su, Y. Y., 410
- Hashash, Youssef M. A., P.E.  
Novel Approach to Integration of Numerical Modeling and Field Observations for Deep Excavations, 872
- Hassan, Ali N.  
*see* El Sherbiny, Ahmed H., 729
- Hassan, Kazi Z. A.  
Iron Oxide Enhanced Chlorine Decay and Disinfection By-Product Formation, 767
- Hassan, M. F.  
*see* Almutairi, Naif B., 500
- Hassan, Munzer  
*see* Chaallal, Omar, 189  
*see* Chaallal, Omar, 191
- Hassan, O.  
*see* Gil, A. J., 82
- Hastak, M.  
*see* Banerjee, D., 103
- Hastak, Makarand  
*see* Goodman, Alvin S., 2075  
*see* Hong, TaeHoon, 245  
*see* Jeong, Jae G., 1771  
*see* Jeong, Jae G., 1797  
*see* Sukumaran, Praveen, 1717
- Hatami, Kianoosh  
Numerical Model for Reinforced Soil Segmental Walls under Surcharge Loading, 841
- Hatch, Sybil E.  
Changing Our World: True Stories of Women Engineers, 2054
- Hatchett, Steve  
*see* Marques, Guilherme F., 1849
- Hatipoglu, Figen  
*see* Sumer, B. Mutlu, 1879
- Hattis, David B.  
Standards Governing Glazing Design in Hurricane Regions, 94

- Haugen, Tore I.**  
*see* Lædre, Ola, 356
- Haukaas, Terje**  
Efficient Computation of Response Sensitivities for Inelastic Structures, 1464
- Hauke, Christopher, P.E.**  
*see* Jones, Jason, P.E., 2012
- Hauserl, Robert**  
*see* Meunier, Nathalie, 660
- Havet, Michel**  
*see* Rouaud, Olivier, 611
- Hay, Shaun**  
Effectiveness of GFRP Sheets for Shear Strengthening of Timber, 237
- Hayden, Nancy**  
*see* Porter, Andrea, 596
- Hayden, Nancy J.**  
*see* Rossman, Anthony J., 659
- Hayden, William M., Jr., P.E.**  
Human Systems Engineering™ — A Trilogy, Part II: May The Force Be With You: Anatomy Of Project Failures, 1904
- Hazaree, C. V.**  
*see* Bapat, J. D., 1310
- Hazlett, Darren, P.E.**  
*see* Yildirim, Yetkin, P.E., 1322
- He, Chansheng**  
*see* Croley, Thomas E., II, 1071
- He, Cheng**  
Case Study: Refinement of Hydraulic Operation of a Complex CSO Storage/Treatment Facility by Numerical and Physical Modeling, 944
- He, Wenlong**  
*see* Easa, Said M., 1700
- He, Xin**  
*see* Cleveland, Theodore G., 1218
- He, Zaicheng**  
*see* Xu, Xingxin, 932
- Healy, Dan**  
Experimental Study of Ice Jam Formation Dynamics, 186
- Healy, Mark Gerard**  
*see* Rodgers, Michael, 685
- Heaney, James P.**  
*see* Sample, David J., 1839
- see* Wright, Leonard T., 1154
- Hearn, George**  
Shape Selection for Lattice Structures, 1608
- Hedrick, Kevin P.**  
Impact of Tunnel Reconstruction on Stream Water Quality in Great Smoky Mountains Natl. Park, 1129
- Hedström, Annelie**  
Methodological Aspects of using Blast Furnace Slag for Wastewater Phosphorus Removal, 746
- Hefer, Arno W.**  
Bitumen Surface Energy Characterization Using a Contact Angle Approach, 1350
- Heffernan, P. J.**  
*see* Wight, R. G., 151
- Hefny, A. M.**  
*see* Zhao, X. B., 498
- Hegab, Mohamed, P.E.**  
Soil Penetration Modeling in Microtunneling Projects, 347
- Hegab, Mohamed Y., P.E.**  
*see* Nassar, Khaled M., 343
- Hegazy, Tarek**  
Computerized System for Efficient Delivery of Infrastructure Maintenance/Repair Programs, 290
- see* Kassab, Moustafa, 391
- Heiyantuduwa, R.**  
Performance of a Penetrating Corrosion Inhibitor in Concrete Affected by Carbonation-Induced Corrosion, 1359
- Hejazi, Mehrdad**  
Structural Analysis of the Wooden Structure of the Historical Building of Ali Qapu, 1616
- Hellmich, Christian**  
*see* Pichler, Bernhard, 913
- Henderson, Andrew D.**  
*see* Charbeneau, Randall J., 978
- Hendren, Patricia**  
Evaluating the Effectiveness of State Department of Transportation Investment Decisions: Linking Performance Measures to Resource Allocation, 1159
- Henning, John T.**  
Membrane Behavior of Two Backfills from Field-Constructed Soil-Bentonite Cutoff Walls, 892
- Henning, Kevin, P.E.**  
*see* Post, Carol, P.E., 2021
- Henry, Thomas**  
*see* Zou, Rui, 644
- Henze, Gregor P., P.E.**  
*see* Bunz, Kimberly R., 88
- Hereth, William R.**  
Automated Estimation of Average Stopped Delay at Signalized Intersections using Digitized Still-Image Analysis of Actual Traffic Flow, 258
- Hermannsson, Åke**  
Numerical Modeling of Thaw Penetration in Frozen Ground Subject to Low-Intensity Infrared Heating, 180
- Hernandez, H.**  
*see* Serrette, R., 1497
- Hernández-Montes, E.**  
Topological Mapping for Tension Structures, 1535
- see* Tjhin, T., 1485
- Herrera, Rodrigo**  
*see* Hu, Zhihong, 820
- Heslop, S.**  
*see* Tierney, M. J., 622

## AUTHOR INDEX

Hong

- Hesseslink, Annika W.  
Historic Discharge Measurements in Three Rhine Branches, 945
- Hicher, P.-Y.  
Anisotropic Nonlinear Elastic Model for Particulate Materials, 874
- Hicks, F. E.  
*see* Healy, Dan, 186
- Higgins, Christopher, P.E.  
High-Cycle Fatigue of Diagonally Cracked Reinforced Concrete Bridge Girders: Field Tests, 173
- Higgins, Peter S.  
*see* Filiatrault, André, 1987
- Higgins, Rebecca B.  
*see* Baise, Laurie G., 844
- Higgs, C. Fred, III  
Development of New Faculty: Summary of the NSF-CMS WEE Workshop, 1418
- Highfield, Wesley E.  
Price of Permits: Measuring the Economic Impacts of Wetland Development on Flood Damages in Florida, 1934
- Higuchi, Toru  
*see* Hyde, Adrian F. L., 845
- Hii, Adrian K. Y.  
Experimental Investigation on Torsional Behavior of Solid and Box-Section RC Beams Strengthened with CFRP using Photogrammetry, 221
- Hill, D. F.  
*see* Lennon, J. M., 1060
- Hill, John M.  
*see* U, José Terán, 1994
- Himeno, Shuji, *nagaokaut.ac.jp*  
Determination and Correlation of Binary Gas Adsorption Equilibria of VOCs, 616
- Hinlein, Erich S.  
*see* Ostendorf, David W., 761
- Hinze, Jimmie  
Analysis of Construction Worker Injuries That Do Not Result in Lost Time, 320
- see Huang, Xinyu, 304
- see Huang, Xinyu, 305
- Hipel, Keith  
*see* Kassab, Moustafa, 391
- Hitchcock, Peter A.  
*see* Burton, Melissa D., 1468
- Ho, David T.  
Comparison of SF<sub>6</sub> and Fluorescein as Tracers for Measuring Transport Processes in a Large Tidal River, 774
- Ho, S. Ping  
Model for Financial Renegotiation in Public-Private Partnership Projects and Its Policy Implications: Game Theoretic View, 355
- Ho, Tom, P.E.  
*see* Tang, Man-Chung, P.E., 2006
- Ho, Tsung-Chun  
*see* Lin, Chang, 488
- Ho, Vivian S. M.  
*see* Hui, Eddie C. M., 1780
- Ho, Yao-Hsien  
*see* Lee, Kwan Tun, 963
- Hoehler, Mathew S.  
Simple Phenomenological Model for Reinforcing Steel under Arbitrary Load, 1542
- Hoeksema, Robert J.  
Designed for Dry Feet: Flood Protection and Land Reclamation in the Netherlands, 2059
- Hoel, Lester A., P.E.  
*see* Miller, John S., P.E., 1674
- Hofland, Bas  
Probability Density Function of Instantaneous Drag Forces and Shear Stresses on a Bed, 1050
- Hoit, Marc, ed.  
*see* Charney, Finley A., ed., 2044
- Hojnik, Tomáš  
*see* Četina, Matjaž, 943
- Holbrook, R. David  
*see* Yi, Taewoo, 757
- Hollander, Yaron  
Determining the Desired Amount of Parking using Game Theory, 1778
- Holloway, Len C.  
*see* Photiou, Nikolaos K., 1335
- Holler, Stefan  
Granular Material Silos under Dynamic Excitation: Numerical Simulation and Experimental Validation, 1594
- Holmes, William T.  
*see* Kircher, Charles A., 1927
- Holmgren, Åke J.  
Using Disturbance Data to Assess Vulnerability of Electric Power Delivery Systems, 1161
- Holst, Troy  
*see* Leung, Susanna M., 603
- Homniam, Phakphong  
*see* Satirapod, Chalermchon, 1642
- Hondzo, Miki  
*see* Weiss, Jeffrey D., 717
- Honeyman, Bruce D.  
*see* Kantar, Cetin, 609
- Hong, Chun-Beom  
Numerical and Experimental Study on Ship Wash Including Wave-Breaking on Shore, 1889
- Hong, Feng  
Estimation of Pavement Performance Deterioration using Bayesian Approach, 1144
- Hong, H. P.  
Optimal Scheduling of Replacement and Rehabilitation of Water Distribution Systems, 1155  
*see* Goda, K., 1639

- Hong, Sze-Yunn**  
*see* Show, Kuan-Yeow, 1267
- Hong, TaeHoon**  
 Construction, Inspection, and Maintenance of FRP Deck Panels, 245  
*see* Sukumaran, Praveen, 1717  
*see* Sukumaran, Praveen, 1733
- Hong, Zhenshun**  
 Comparison in Undrained Shear Strength between Undisturbed and Remolded Ariake Clays, 806  
 Experimental Study of Macro- and Microbehavior of Natural Diatomite, 833  
*see* Luna, Ronaldo, ed., 2088
- Hoo, Wei Yee**  
*see* Ling, Florence Yean Yng, 309
- Hook, David E., P.E.**  
 Deflection Protection, 2032
- Horman, Michael J.**  
 Sequence Planning for Electrical Construction, 324  
*see* El Wardani, Marwa A., 311  
*see* Lapinski, Anthony R., 395  
*see* Pulaski, Michael H., 91  
*see* Thomas, H. Randolph, 297
- Hornych, Pierre**  
*see* Chazallon, C., 40
- Horvath, Arpad**  
*see* Guggemos, Angela Acree, 102  
*see* Junnila, Seppo, 1138  
*see* Kitou, Erasmia, 1149
- Hosbas, Gursel**  
*see* Guler, Goknil, 1645
- Hossain, Khandakar M. Anwar**  
 Macro- and Microstructural Investigations on Strength and Durability of Pumice Concrete at High Temperature, 1320
- Hossain, Md. Akram**  
*see* Alam, Mahbub, 623
- Hou, Chao-Sheng**  
 Axisymmetric Nonlinear Stability of a Shallow Conical Shell with a Spherical Cap of Arbitrary Variable Shell Thickness, 555
- Houck, Mark H., P.E.**  
*see* Skolicki, Zbigniew, 1822
- Houghton, Robert W.**  
*see* Ho, David T., 774
- Hourani, May S.**  
 Distribution Deviation of Large Aggregates from Uniformity in Waste Contaminated Concrete. II: Experimental Results and Quality Assurance, 1269  
*see* Inyang, Hilary I., 1268
- Houston, Sandra L., ed.**  
*see* Miller, Gerald A., ed., 2096
- Howell, Daniel A.**  
 System for In-Service Strain Monitoring of Ordinary Bridges, 170
- Howell, Terry A.**  
*see* Irmak, Suat, 1228
- Howitt, Richard**  
*see* Marques, Guilherme F., 1849
- Hoyos, Laureano R., ed.**  
*see* Lu, Ning, ed., 2046  
*see* Puppala, Anand J., 808
- Hruday, T. M.**  
*see* Khoo, H. A., 546
- Hryciw, Roman**  
*see* Elsworth, Derek, 915
- Hsieh, C. D.**  
 Study of Total Maximum Daily Load and Nonpoint Source Pollution Control Strategies for Reservoir Watershed, 1954
- Hsieh, Kai H.**  
 Overview of Vibrational Structural Health Monitoring with Representative Case Studies, 174
- Hsieh, M.-J.**  
*see* Chen, Shyi-Tien, 678
- Hsing, Hao-Jan**  
 Evaluation of Decolorization, Mineralization, and Toxicity Reduction of an Azo Dye C.I. Reactive Black 5 in a Countercurrent Bubble Column by Ozone, 1940
- Hsiung, Yun-Mei**  
 Analytical Solution for Piles Supporting Combined Lateral Loads, 899
- Hsu, Chaug-Ing**  
 CBD Oriented Commuters' Mode and Residential Location Choices in an Urban Area with Surface Streets and Rail Transit Lines, 1799
- Hsu, Chu-Chung**  
 Threshold Shear Strain for Cyclic Pore-Water Pressure in Cohesive Soils, 900
- Hsu, C.-Y.**  
*see* Chen, Shyi-Tien, 689
- Hsu, Ming-Hsi**  
 Dynamic Routing Model with Real-time Roughness Updating for Flood Forecasting, 992
- Hsu, Shaohua Marko**  
*see* Tseng, Chih-Ming, 1012
- Hsu, Sung-Chi**  
 Material Spatial Variability and Slope Stability for Weak Rock Masses, 796
- Hsu, Tung-Wen**  
 Behavior of One-Dimensional Consolidation under Time-Dependent Loading, 480
- Hsu, Wen-Chung**  
*see* Wu, Jong-Cheng, 1448
- Hsuan, Grace**  
*see* Suarez, Jorge, 1327
- Hu, Alan Y.**  
 Treatment of Dilute Wastewaters using a Novel Submerged Anaerobic Membrane Bioreactor, 604
- Hu, Henry H.**  
 Gridded Snowmelt and Rainfall-Runoff CWMS Hydrologic Modeling of the Red River of the North Basin, 1080

## AUTHOR INDEX

Hung

- Hu, Jing**  
Selective Removal of Heavy Metals from Industrial Wastewater using Maghemite Nanoparticle: Performance and Mechanisms, 679
- Hu, L. M.**  
Centrifuge Testing of LNAPL Migration and Soil Vapor Extraction for Soil Remediation, 1943
- Hu, Sau-Lon James**  
Cross-Modal STrain Energy Method for Estimating Damage Severity, 477
- Hu, S.-L. James**  
*see* Li, Huajun, 533
- Hu, X. G.**  
Erosive Wear of Hydraulic Concrete with Low Steel Fiber Content, 1065
- Hu, Xiaofeng**  
Damage Identification Based on Dead Load Redistribution: Effect of Measurement Error, 1563  
*see* Shenton, Harry W., III, 1562
- Hu, Yi-Yiang**  
*see* Lin, Jen-Jia, 1773
- Hu, Zhihong**  
Influence of Torque on Lateral Capacity of Drilled Shafts in Sands, 820
- Huai, Wenxin**  
Numerical Simulation of Obstructed Round Buoyant Jets in a Static Uniform Ambient, 974
- Huang, Baoshan, ed.**  
Pavement Mechanics and Performance, 2079
- Huang, Bingbin**  
*see* Fang, Hongwei, 1053
- Huang, Bo**  
*see* Liu, Nan, 286
- Huang, Chang-Wei**  
*see* Leu, Liang-Jeng, 1531
- Huang, Chen-Wei**  
*see* Chen, Liang-Chien, 1651
- Huang, Chien-Wei**  
*see* Kuo, Chen-Ming, 1321
- Huang, Chihpin**  
*see* Den, Walter, 772
- Huang, Ching-Tung**  
Equivalent Linearization for the Nonstationary Response Analysis of Nonlinear Systems with Random Parameters, 481
- Huang, Frank Y. C., P.E.**  
Feasibility of Using Natural Zeolites to Remove Sodium from Coal Bed Methane-Produced Water, 771
- Huang, He Qing**  
Scale Independent Linear Behavior of Alluvial Channel Flow, 1002
- Huang, Jianchun**  
*see* Greimann, Blair, 1003
- Huang, Jin H.**  
Electroelastic Response of a Laminated Composite Plate with Piezoelectric Sensors and Actuators, 526
- Huang, Ju-Sheng**  
*see* Ting, Wen-Huei, 635
- Huang, Kevin**  
*see* Vickery, Peter J., 1930
- Huang, Maosong, ed.**  
*see* Luna, Ronaldo, ed., 2088
- Huang, Min-Jye**  
*see* Teng, Junn-Yuan, 1791
- Huang, Poshu**  
*see* Litwack, Howard S., 642
- Huang, Rong-yau**  
Non-Unit-Based Planning and Scheduling of Repetitive Construction Projects, 346
- Huang, Sen-Tien**  
*see* Shih, Naai-Jung, 301
- Huang, Wen-Chih**  
*see* Teng, Junn-Yuan, 1791
- Huang, Wenxiong**  
Finite-Element Parametric Study of the Consolidation Behavior of a Trial Embankment on Soft Clay, 45
- Huang, Xinjiang**  
Measured and Predicted Herbicide Removal by Mulch, 702
- Huang, Xinyu**  
Owner's Role in Construction Safety, 304  
Owner's Role in Construction Safety: Guidance Model, 305
- Huang, Yi-Chu**  
*see* Wu, Ting-Nien, 1955
- Huang, Yong H.**  
*see* Zhang, Tian C., 658
- Huang, Z.**  
Modified Skew Bending Model for Segmental Bridge with Unbonded Tendons, 109
- Hubbard, K. G.**  
*see* Sridhar, V., 1216
- Huebschman, Ryan**  
*see* Garcia, Camilo, 339
- Hughs, Erin**  
Live-Load Distribution Factors for Prestressed Concrete, Spread Box-Girder Bridge, 160
- Huh, Youngki**  
*see* O'Connor, James T., 328
- Hui, Chi Mun Eddie**  
*see* Mostafa, Anirban, 1779
- Hui, Eddie C. M.**  
Market Disequilibrium and Urban Land Shortages: Analysis of Policy and Patterns in Hong Kong, 1780
- Hull, T. S.**  
*see* Surjadiata, J., 49
- Hundal, Lakhwinder S.**  
*see* Pirnie, Erica F., 662
- Hung, Way-Chang**  
*see* Hsu, Tung-Wen, 1681

- Hung, Wen-Chi**  
Catalytic Incineration of Acrylonitrile with Platinum Supported on  $\text{Al}_2\text{O}_3$ , 751
- Hunt, Bruce**  
Asymptotic Solutions for One-Dimensional Dispersion in Rivers, 940
- Hunt, Suzanne P.**  
*see* Camac, Bronwyn A., 52
- Hunt, W. F.**  
Evaluating Bioretention Hydrology and Nutrient Removal at Three Field Sites in North Carolina, 1232
- Hunter, Kirsty**  
*see* Yu, Ann T. W., 404
- Huo, Sharon**  
*see* Patrick, Michael D., 117
- Huo, X. Sharon**  
Case Study of a High-Performance Concrete Bridge in Tennessee, 1992
- see* Conner, Stewart, 123
- Husain, Tahir**  
*see* Chowdhury, Shakawat, 728
- Hutchinson, Tara C.**  
Improved Image Analysis for Evaluating Concrete Damage, 265
- see* Chaudhuri, Samit Ray, 1527
- Hwang, Hwa-Wei**  
*see* You, Rey-Jer, 1649
- Hwang, Sangchul**  
Remediation of RDX-Contaminated Water using Alkaline Hydrolysis, 610
- Hwang, Sz-Chwun John**  
*see* Lin, Yun-Huin, 630
- Hyari, Khalid**  
Lighting Requirements for Nighttime Highway Construction, 331
- Optimal Planning and Scheduling for Repetitive Construction Projects, 1238
- Hyde, Adrian F. L.**  
Liquefaction, Cyclic Mobility, and Failure of Silt, 845
- see* Takahashi, Naoki, 834
- Hymore, F. K.**  
*see* Aisien, F. A., 723
- Hynes, P.**  
*see* McShannon, J., 1424
- Hyodo, Masayuki**  
*see* Takahashi, Naoki, 834
- Hyun, Chang-Taek**  
*see* Cho, Young-Jun, 1422
- Ibbs, C. William**  
*see* Ling, Florence Yean Yng, 309
- Ibbs, William**  
*see* Chang, Andrew S., P.E., 1240
- Ibrahim, Sherif A.**  
Fatigue of Corrugated-Web Plate Girders: Analytical Study, 1575
- Fatigue of Corrugated-Web Plate Girders: Experimental Study, 1574
- Ichikawa, Tetsuya**  
*see* Azam, Mir Hammadul, 1891
- Ickes, Jennifer A.**  
*see* Lyons, Terrence, 639
- Ideker, Jason**  
*see* Yildirim, Yetkin, P.E., 1322
- IDRiss, I. M.**  
*see* Boulanger, Ross W., 908
- Idriss, Rola**  
*see* Hughs, Erin, 160
- Iglesias, Celso**  
Long-Term Behavior of Precast Segmental Cantilever Bridges, 137
- Ignaccolo, Matteo**  
Discrete Choice Model for Defining a Parking-Fee Policy on Island of Ortigia, Siracusa, 1789
- Iida, Masahiro**  
Three-Dimensional Linear and Simplified Nonlinear Soil Response Methods Based on an Input Wave Field, 46
- Iledare, Wumi O.**  
*see* Kaiser, Mark J., 369
- Imberger, Jörg**  
*see* Anohin, Vadim V., 1047
- Indraratna, Buddhima**  
Enhanced Criterion for Base Soil Retention in Embankment Dam Filters, 929
- see* Sathananthan, Iyathurai, 867
- see* Walker, Rohan, 866
- Ingham, J. M.**  
*see* Voon, K. C., 1478
- Inman, Daniel J.**  
*see* Salehian, Armaghan, 79
- Inoue, Jirou**  
*see* Xiao, Zhi-Gang, 155
- Inoue, Kazuo**  
Seismic-Resistant Weld-Free Steel Frame Buildings with Mechanical Joints and Hysteretic Dampers, 1525
- Insauti, A.**  
*see* Puente, L., 242
- Inturri, Giuseppe**  
*see* Ignaccolo, Matteo, 1789
- Inyang, Hillary**  
*see* Punthutaecha, Koonnamas, 1292
- Inyang, Hilary**  
*see* Udoeyo, Felix F., 1330
- Inyang, Hilary L.**  
Distribution Deviation of Large Aggregates from Uniformity in Waste Containment Concrete. I: Quantitative Model Formulation, 1268
- Porosity Fluctuations in Desiccating Samples of Grout-Stabilized Soil, 1289
- see* Bae, Sunyoung, 1293

## AUTHOR INDEX

Jarny

- see* Chaffin, John H., 431  
*see* Hourani, May S., 1269  
**Ioualalen, M.**  
Computation of Short-Crested Deepwater Waves, 1870  
**Iourtchenko, D.**  
*see* Dimberg, M., 568  
**Irabien, Angel**  
*see* López, Isabel, 706  
**Irene, M. C. Lo, ed.**  
Zero-Valent Iron Reactive Materials for Hazardous Waste and Inorganics Removal, 2097  
**Irmak, Ayse**  
*see* Irmak, Suat, 1228  
**Irmak, Suat**  
Sensitivity Analyses and Sensitivity Coefficients of Standardized Daily ASCE-Penman-Monteith Equation, 1228  
**Irwin, Peter A.**  
Exposure Categories and Transitions for Design Wind Loads, 1612  
**Isacsson, Ulf**  
*see* Karlsson, Robert, 1270  
**Ishak, Sherif**  
Potential Computational Benefits of Geometric, Kinematic, and Behavioral Downsampling of Microscopic Traffic Network Simulation, 277  
**Ishida, Eisuke**  
*see* Shimizu, Yoshihisa, 801  
**Ishihara, Masanori**  
*see* Okamura, Mitsu, 803  
**Ishikawa, Tadaharu**  
*see* Umeda, Makoto, 1020  
**Islam, G. M. Tarekul**  
Nodal Point Relation for the Distribution of Sediments at Channel Bifurcation, 1043  
**Ismail, Ihab A.**  
Evaluation of Legal Risks for E-Commerce in Construction, 1438  
**Ismail, Mostafa A.**  
*see* Sharma, Shambhu S., 925  
**Isayama, Ryoji**  
*see* Shimizu, Yoshihisa, 801  
**Issa, Raja R. A.**  
*see* Cox, Robert F., 303  
**Issac, Bobby**  
*see* Kurup, Pradeep U., P.E., 882  
**Isyumov, Nicholas**  
*see* Kijewski-Correa, Tracy, 1588  
**Itani, Ahmad M., P.E.**  
*see* Carden, Lyle P., 1471  
*see* Carden, Lyle P., 1472  
**Ito, Hitoshi**  
Sequential Hybrid Inverse Mapping for State-Specified Design of Frames, 1581  
**Ivey, Gregory N.**  
*see* Anohin, Vadim V., 1047  
**Iwan, W. D.**  
*see* Scruggs, J. T., 532  
**Iwan, Wilfred D.**  
*see* Guyader, Andrew C., 1445  
*see* Huang, Ching-Tung, 481  
**Iyengar, Hal, P.E.**  
Serpentine Span, 2000  
**Iyer, K. C.**  
Critical Factors Affecting Schedule Performance: Evidence from Indian Construction Projects, 375  
**Iz, H. Bâki**  
*see* Tse, C. M., 1654  
**Jabareen, Mahmood**  
Postbuckling Analysis of Geometrically Imperfect Conical Shells, 574  
**Jablin, Mark**  
*see* Patrick, Michael D., 117  
**Jackson, N. C.**  
*see* Papagiannakis, A. T., 1688  
*see* Papagiannakis, A. T., P.E., 1759  
**Jacobson, David A.**  
*see* Bank, Lawrence C., 208  
**Jácome, A.**  
Simultaneous Removal of Organic Matter and Nitrogen Compounds in Autoaerated Biofilms, 727  
**Jain, M. K.**  
Enhanced Runoff Curve Number Model Incorporating Storm Duration and a Nonlinear  $I_a$ - $S$  Relation, 1136  
**Jain, Pradeep**  
Estimating the Hydraulic Conductivity of Landfilled Municipal Solid Waste using the Borehole Permeameter Test, 671  
**Jain, Sharad K.**  
Development of Optimal and Physically Realizable Unit Hydrograph, 1134  
**Jalilal, Santosh A.**  
Assessment of the Impact of Improvement Measures on Air Quality: Case Study of Delhi, 1714  
**Jan, Huang-Hsiang**  
*see* Chen, Liang-Chien, 1651  
**Jangid, R. S.**  
*see* Kunde, M. C., 115  
**Janke, Robert**  
Comparison of Physical Sampling and Real-Time Monitoring Strategies for Designing a Contamination Warning System in a Drinking Water Distribution System, 1834  
*see* Murray, Regan, 1831  
**Janoo, V.**  
*see* Shoop, S., 857  
**Jarenprasert, Sittipong**  
Inelastic Spectrum-Based Approach for Seismic Design Spectra, 1565  
**Jarny, S.**  
*see* Chanson, H., 960

- Jarrett, A. R.**  
*see* Hunt, W. F., 1232
- Jaselskis, Edward J.**  
*see* Elimisalam, Tarek, 414
- Jaszkowski, Piotr**  
 Scheduling Construction Projects using Evolutionary Algorithm, 374
- Javan, M.**  
*see* Shahrokhnia, M. A., 1184
- Javanmardi, Farrokh**  
*see* Léger, Pierre, 926
- Javdekar, Chitra N.**  
*see* Sanayei, Masoud, 172
- Jayabalou, R.**  
*see* Sivacoumar, R., 628
- Jayawardena, A. W.**  
 Comparative Analysis of Data-Driven and GIS-Based Conceptual Rainfall-Runoff Model, 1070
- Jefferis, Stephan**  
*see* Bouazza, Abdelmalek, 871
- Jeng, Dong-Sheng**  
*see* Gao, Fuping, 1727
- Jeng, Raymond I., P.E.**  
 NRCS (SCS) Synthetic Curvilinear Dimensionless Unit Hydrograph, 1236
- Jenkins, Marion**  
*see* Marques, Guilherme F., 1849
- Jennings, Aaron A.**  
*see* Petersen, Elijah J., 627
- Jennings, Aaron A., P.E.**  
*see* Deng, Xiaolin, 641
- Jennings, Kristofor**  
*see* Blatchley, Ernest R., III, 742
- Jensen, Derek H.**  
*see* Rollins, Kyle M., 894  
*see* Rollins, Kyle M., 895
- Jensen, Paul**  
*see* Suarez, Monica P., 770
- Jeon, Christy Mihyeon**  
 Transportation System Sustainability Issues in High-, Middle-, and Low-Income Economies: Case Studies from Georgia (U.S.), South Korea, Colombia, and Ghana, 1793
- Jeong, Daell**  
*see* Kim, Young-Oh, 1130
- Jeong, Hyung Seok**  
 Operational Response Model for Physically Attacked Water Networks using NSGA-II, 283
- Jeong, Hyung Seok (David)**  
*see* Baik, Hyeon-Shik, 1802
- Jeong, Jae G.**  
 Supply Chain Analysis and Modeling for the Manufactured Housing Industry, 1771
- Supply Chain Simulation Modeling for the Manufactured Housing Industry**, 1797
- Jeong, Jin-Hoon**  
 Finite-Element Modeling and Calibration of Temperature Prediction of Hydrating Portland Cement Concrete Pavements, 1295
- Jeong, Sang-man**  
*see* Kim, Lee-Hyung, 711
- Jeong, Seong Jin**  
*see* Baek, Kyong Oh, 1033
- Jeong, Seong-Hoon**  
 New Three-Dimensional Damage Index for RC Buildings with Planar Irregularities, 1585
- Jepsen, Richard A.**  
*see* Ravens, Thomas M., 1899
- Jergeas, George**  
*see* Moussa, Mohamed, 412
- Jesionek, Krzysztof**  
*see* Merry, Scott M., 829
- Jha, K. N.**  
*see* Iyer, K. C., 375
- Jha, Madan K.**  
 Evaluation of Traditional and Nontraditional Optimization Techniques for Determining Well Parameters from Step-Drawdown Test Data, 1135
- Jha, Manoj K., P.E.**  
 Highway Route Optimization Based on Accessibility, Proximity, and Land-Use Changes, 1708
- Ji, Shunying**  
 Effect of Contact Force Models on Granular Flow Dynamics, 566
- Ji, Z.**  
*see* Xiong, G. J., tu.edu.cn, 215
- Jia, Shaofeng**  
 Industrial Water Use Kuznets Curve: Evidence from Industrialized Countries and Implications for Developing Countries, 1819
- Jia, Yafei**  
*see* Chao, Xiaobo, 753  
*see* Ding, Yan, 1900
- Jia, Z.**  
 Effect of Controlled Drainage and Vegetative Buffers on Drainage Water Quality from Wastewater Irrigated Fields, 1182
- Jiang, Kunsheng**  
*see* Goto, Yoshiaki, 1599
- Jiang, Zhuojun**  
 Improved AADT Estimation by Combining Information in Image- and Ground-Based Traffic Data, 1719
- Jin, Shanshan**  
 Polychromatic UV Fluence Measurement using Chemical Actinometry, Biodosimetry, and Mathematical Techniques, 693
- Jin, Yee-Chung**  
*see* Mihial, Darren J., 1951  
*see* Mysore, Deepa, 1957  
*see* Ramakrishna, Devikarani M., 1962  
*see* Xia, Cenling, 1013

## AUTHOR INDEX

Juri

- Jin, Zhanli  
*see* Yang, Yaowen, 66
- Jing, Chao  
*see* Wang, Dian-Hai, 1774
- Jo, Hyo Jae  
*see* Jung, Kwang Hyo, 454
- Jo, Ji-Seong  
Modified Sturm Sequence Property for Damped Systems, 515
- Johal, Prithvi Raj Singh  
*see* Rivin, Eugene I., 1360
- Johann, Matthew A.  
Performance-Based Structural Fire Safety, 1369
- Johari, A.  
Prediction of Soil-Water Characteristic Curve using Genetic Programming, 840
- Johnson, Billy E.  
Numerical Simulation of Depleted Uranium Transport in a Desert Environment using a Distributed Parameter Watershed Model, 1960
- Johnson, Erik A.  
*see* Christenson, Richard E., 462
- Johnson, Michelle L.  
*see* Mara, D. Duncan, 646
- Johnson, Rita  
*see* Saidi, M. Saidi, 152
- Johnston, Adrienne R.  
Effects of Vertical Load and Hold-Down Anchors on the Cyclic Response of Wood Framed Shear Walls, 1579
- Johnston, Douglas M.  
Downstream Economic Benefits of Conservation Development, 1804
- Jones, Christopher  
*see* Scawthorn, Charles, 1928
- Jones, Jason, P.E.  
Geometry Lesson, 2012
- Jones, Jonathan E., ed.  
Great Works on Urban Water Resources (1962-2001), 2071
- Jones, Michael  
*see* Medina, Victor F., P.E., 1950
- Jones, Steven L.  
*see* Anderson, Michael D., 1784
- Jordan, Jonathan  
*see* Cornejo, Camilo, 1215
- Joshi, R. C.  
*see* Xu, P., 1941
- Jou, Yow-Jen  
Incomplete Information Analysis for the Origin-Destination Survey Table, 1794
- Jowitt, Paul W.  
*see* Ang, Wah Khim, 1818
- Józsa, Zsuzsanna  
*see* Nemes, Rita, 1343
- Ju, Shen-Haw  
Reduction of Vibrations due to Foundation Slabs, 825
- Juan, Yi-Kai  
*see* Perng, Yeng-Horng, 390
- Juang, C. Hsein  
First-Order Reliability Method for Probabilistic Liquefaction Triggering Analysis using CPT, 809
- Juirnarongrit, Teerawut  
Soil-Pile Response to Blast-Induced Lateral Spreading, II: Analysis and Assessment of the  $p-y$  Method, 794  
*see* Ashford, Scott A., 793
- Julien, Pierre Y.  
*see* Lee, Jong-Seok, 946
- Junaideen, S. M.  
*see* Pradhan, B., 36
- Juneau, O.  
*see* Konrad, J. M., 795
- Jung, Bong Seog  
Hydraulic Optimization of Transient Protection Devices using GA and PSO Approaches, 1805
- Jung, Chang H.  
Analytic Solution on Critical Suspended Particle Size and Minimum Collection Efficiency in Deep Bed Filtration, 741
- Jung, Hye-Young  
*see* Yoo, Chung-sik, 921
- Jung, Jiwon  
Finite-Element Analysis of Tapered Steel and Fiber-Reinforced Plastic Bridge Camera Poles, 164
- Jung, Kwang Hyo  
Viscous Effect on the Roll Motion of a Rectangular Structure, 454
- Jung, Sungmoon  
*see* Hashash, Youssef M. A., P.E., 872
- Jung, Yong  
Transport of Edible Oil Emulsions in Clayey Sands: 3D Sandbox Results and Model Validation, 1096
- Junnila, Seppo  
Life-Cycle Assessment of Office Buildings in Europe and the United States, 1138
- Jurado-Piña, R.  
*see* Hernández-Montes, E., 1535
- Juri, Natalia Ruiz  
Evaluation of the Trans-Texas Corridor Proposal: Application and Enhancements of the Random-Utility-Based Multiregional Input-Output Model, 1720

- Jutila, Scott A.  
*see* Hu, Henry H., 1080
- Kaanagbara, Life  
*see* Chaffin, John H., 431
- Kabir, Ahsanul  
*see* Mazumder, Anisur Rahman, 1352
- Kabir, M. R.  
*see* Islam, G. M. Tarekul, 1043
- Kacimov, A. R.  
Capillarity and Evaporation Exacerbated Seepage Losses from Unlined Channels, 1235
- Seepage to a Drainage Ditch and Optimization of Its Shape, 1234
- Kadam, Rupesh  
*see* Puppala, Anand J., 808
- Kadem, N.  
*see* Pascal, M., 1168
- Kadir, Tariq N., P.E.  
*see* Dogru, Emin C., P.E., 1054
- Kaewkulchai, G.  
Modeling the Impact of Failed Members for Progressive Collapse Analysis of Frame Structures, 1403
- Kagioglou, Michail  
*see* Costa, Dayana B., 1255
- Kahle, Stephen L., P.E.  
*see* Masters, Kathryn, P.E., 2028
- Kahn, Lawrence F.  
*see* Moon, Franklin L., 1506
- see* Yi, Tianyi, 1504
- see* Yi, Tianyi, 1505
- Kaiser, Mark J.  
The Gulf of Mexico Decommissioning Market, 369
- Offshore Decommissioning Cost Estimation in the Gulf of Mexico, 313
- Kaku, Vikram J.  
Evaluation of Mixing Energy in Laboratory Flasks used for Dispersant Effectiveness Testing, 593
- Kakuturu, Sai  
Evaluation of the Parameters Influencing Self-Healing in Earth Dams, 860
- Mechanistic Model for Self-Healing of Core Cracks in Earth Dams, 861
- Kaledhonkar, M. J.  
Regional Salinity Modeling for Conjunctive Water Use Planning in Kheri Command, 1207
- Kalin, Latif  
Hydrologic Modeling of an Eastern Pennsylvania Watershed with NEXRAD and Rain Gauge Data, 1128
- Kalkan, Erol  
Adaptive Modal Combination Procedure for Nonlinear Static Analysis of Building Structures, 1609
- Kam, T. Y.  
*see* Chen, C. M., 560
- see* Lee, C. R., 521
- Kamali, Mohammad T.  
Three-Dimensional Free Vibration Analysis of Multi-phase Piezocomposite Structures, 524
- Kamara, John M.  
*see* Al-Ghassani, Ahmed M., 340
- Kamat, Vineet R.  
*see* Ismail, Ihab A., 1438
- Kambham, K.  
*see* Kura, B., 768
- Kamprath, Michael T.  
Corridor Protection through NEPA, 1420
- Kan, Raymond G.  
*see* Nedović-Budić, Zorica, 1795
- Kandil, Amr  
MACROS: Multiobjective Automated Construction Resource Optimization System, 1252
- Parallel Genetic Algorithms for Optimizing Resource Utilization in Large-Scale Construction Projects, 337
- Kang, Guyoung  
*see* Chen, Shyi-Tien, 678
- Kang, Yaohu  
*see* Wang, Qing-Gai, 1185
- Kang, Yi-Lung  
*see* Chung, Weihao, 998
- Kanit, Recep  
*see* Atimtay, Ergin, P.E., 1986
- Kannah, T. Rajesh  
Experimental Study on the Hydrodynamics of a Floating, Production, Storage, and Offloading System, 1861
- Kantar, Cetin  
Citric Acid Enhanced Remediation of Soils Contaminated with Uranium by Soil Flushing and Soil Washing, 609
- Kanto, Antti  
*see* Ruotoistenmäki, Antti, 1742
- Kanavinde, A. M.  
Void Growth Model and Stress Modified Critical Strain Model to Predict Ductile Fracture in Structural Steels, 1627
- see* Chi, W.-M., 1455
- Kao, C. M.  
*see* Yeh, T. Y., 1963
- Kapadia, Chirag  
*see* Bolton, James, 745
- Karacabeyli, Erol  
*see* Mi, Hongyong, 1452
- see* Varoglu, Erol, 1578
- Karaesmen, Itir Z.  
*see* Akinci, Burcu, 401
- Karakas, Murat, P.E.  
*see* Zekioglu, Atila, P.E., 2040
- Karbhari, Vlastasp M.  
*see* Cheng, Lijuan, 150
- see* Matta, Fabio, 214

## AUTHOR INDEX

Kennedy

- Kareem, A.  
*see* Kijewski-Correa, T., 543
- Kareem, Ahsan  
*see* Chen, Xinzhong, 551  
*see* Kijewski-Correa, Tracy, 1588
- Kareen, A.  
*see* Kijewski-Correa, T., 1561
- Kargahi, Mohsen  
Structural Weight Optimization of Frames Using Tabu Search. I: Optimization Procedure, 1622
- Structural Weight Optimization of Frames Using Tabu Search. II: Evaluation and Seismic Performance, 1623
- Karlsson, Robert  
Material-Related Aspects of Asphalt Recycling — State-of-the-Art, 1270
- Karner, Dawn A.  
*see* Xagorarakis, Irene, 692
- Karney, Bryan W.  
*see* Jung, Bong Seog, 1805
- Karunaratna, S. A. S. A.  
*see* Lin, Pengzhi, 553
- Kashani, Israel  
Base Station Establishment using Multiple Global Positioning Satellite Stations and Free Net Approach, 1644
- Kashyap, Deepak  
*see* Shalabey, M. E. E., 1103
- Kassab, Moustafa  
Conflict Resolution in Construction Disputes using the Graph Model, 391
- Kassem, A. A.  
*see* Mohapatra, P. K., 952
- Katafygiotis, Lambros  
Domain Decomposition Method for Calculating the Failure Probability of Linear Dynamic Systems Subjected to Gaussian Stochastic Loads, 482
- Kaub, Brian C., P.E.  
*see* Anderson, Lee L., Jr., P.E., 1915
- Kaul, S. N.  
*see* Rao, N. N., 624
- Kavazanjian, Edward, Jr.  
*see* Matasovic, Neven, 819  
*see* Zekkos, Dimitrios, 893
- Kavvas, M. L.  
Watershed Environmental Hydrology Model: Environmental Module and Its Application to a California Watershed, 1099
- Kavvas, M. Levent  
*see* Kim, Sangdan, 1073  
*see* Kim, Sangdan, 1079
- Kawabata, Toshinori  
Behavior of Buried Flexible Pipe under High Fills and Design Implications, 903
- Kawakami, Hideji  
*see* Chang, Heui-Yung, 1592
- Kawamura, Ikuo  
*see* Sana, Ahmad, 1040
- Kawanishi, Naoki  
*see* Goto, Yoshiaki, 1630
- Kawasaki, T.  
*see* Yoshihara, H., 1271
- Kawashima, Kazuhiko  
*see* Sakai, Junichi, 1449
- Kaya, Abidin, P.E.  
*see* Yukselen, Yeliz, 865
- Kayen, R. E.  
*see* Moss, R. E. S., 873
- Kayen, Robert E.  
*see* Cetin, K. Onder, 10
- Kayhanian, Masoud  
*see* Khan, Sabir, 629  
*see* Kim, Lee-Hyung, 711  
*see* Li, Yingxia, 695
- Kayser, Caroline R.  
Characterization of Material Properties of HPS-485W (70 W) TMCP for Bridge Girder Applications, 114
- Kear, T. P.  
*see* Eisinger, D. S., 1756
- Keceli, Fuat  
*see* Akinci, Burcu, 401
- Keedwell, Edward  
Novel Cellular Automata Approach to Optimal Water Distribution Network Design, 250
- Keegan, Mike  
*see* Lyons, Terrence, 639
- Keeler, Bruce J., P.E.  
*see* Hahn, Daniel E., P.E., 2024
- Keiller, Alan P.  
*see* Ledbetter, Stephen R., 98
- Keller, Thomas  
Multifunctional Hybrid GFRP/Steel Joint for Concrete Slab Structures, 244
- Kells, James A.  
*see* McLeod, Shaun M., 750
- Kelly, John  
*see* Yu, Ann T. W., 404
- Kemp, A. R.  
*see* Dundu, M., 1559
- Kenis, William  
*see* Sun, Lu, 505
- Kennedy, Christopher  
*see* Zhang, Lei, 1072
- Kennedy, Christopher A.  
*see* Norman, Jonathan, 1772
- Kennedy, Lonnie G.  
*see* Everett, Jess W., P.E., 1968
- Kennedy, Matthew G.  
Three-Dimensional Modeling for Estimation of Hydraulic Retention Time in a Reservoir, 710

- Kennedy, Matthew J.**  
Development of Tensile Hoop Stress during Horizontal Directional Drilling through Sand, 48
- Kennedy, P.**  
Progress of Statutory Adjudication as a Means of Resolving Disputes in Construction in the United Kingdom, 1426
- Kenney, Thomas M., P.E., ed.**  
*see* Crandell, Jay H., P.E., ed., 2083
- Kermani, Abdy**  
Racking Performance of Structural Insulated Panels, 1617
- Keshari, Ashok K.**  
*see* Kaledhonkar, M. J., 1207
- Keskin, M. Erol**  
Artificial Neural Network Models of Daily Pan Evaporation, 1077
- Kewalramani, Manish A.**  
*see* Gupta, Rajiv, 1311
- Khalaf, Fouad M.**  
Using Crushed Clay Brick as Coarse Aggregate in Concrete, 1319
- Khalafallah, Ahmed**  
Minimizing Construction-Related Hazards in Airport Expansion Projects, 344
- Optimizing Airport Construction Site Layouts to Minimize Wildlife Hazards, 1257
- Khan, Liaqat A.**  
Validation of a Three-Dimensional Computational Fluid Dynamics Model of a Contact Tank, 1005
- Khan, Mohammad Sajjad**  
Application of Support Vector Machine in Lake Water Level Prediction, 1091
- Khan, Sabbir**  
Oil and Grease Measurement in Highway Runoff — Sampling Time and Event Mean Concentrations, 629
- Khanal, Nabin**  
Distribution System Contamination Events: Exposure, Influence, and Sensitivity, 1830
- Khandelwal, Kapil**  
*see* Chao, Shih-Ho, 1556
- Khare, Pradnya**  
*see* Rao, N. N., 624
- Kharif, C.**  
*see* Ioualalen, M., 1870
- Khattab, Magdy M.**  
*see* El-Dakhakhni, Wael W., 1635
- Khayat, K. H.**  
*see* Assaad, J. J., 1353
- Khedr, Safwan A.**  
Response of Air-Entrained Concrete to Severe Chemical Aggression, 1262
- Khire, Ritesh A.**  
Study of a Honeycomb-Type Rigidified Inflatable Structure for Housing, 1603
- Khodadoust, Amid P.**  
Cyclodextrin-Enhanced Electrokinetic Remediation of Soils Contaminated with 2,4-Dinitrotoluene, 718
- see** Lei, Li, 626
- Khoo, H. A.**  
Microvoid Damage Model with Material Dilatation for Ductile Fracture, 546
- Khor, Eng Hui**  
*see* Juang, C. Hsein, 809
- Khu, Soon-Thiam**  
*see* Keedwell, Edward, 250
- Khudeira, Soliman**  
Assessment of Potential Seismic Damage to Residential Unreinforced Masonry Buildings in Northern Illinois, 1979
- Kijewski-Correa, T.**  
Efficacy of Hilbert and Wavelet Transforms for Time-Frequency Analysis, 543
- Experimental Verification and Full-Scale Deployment of Global Positioning System to Monitor the Dynamic Response of Tall Buildings, 1561
- Kijewski-Correa, Tracy**  
Validating Wind-Induced Response of Tall Buildings: Synopsis of the Chicago Full-Scale Monitoring Program, 1588
- Kilic, Havvanur**  
*see* Guler, Goknil, 1645
- Kilpatrick, John**  
*see* Kijewski-Correa, Tracy, 1588
- Kim, Changmo, Ph.D. Candidate**  
*see* Lee, Eul-Bum, P.E., P.M.P., 1752
- Kim, Changwan**  
Human-Assisted Obstacle Avoidance System using 3D Workspace Modeling for Construction Equipment Operation, 262
- Kim, Deokjoo**  
Postbuckling of Moderately Thick Imperfect Rings under External Pressure, 569
- Kim, Do-Gyeong**  
Modeling Crash Types: New Insights into the Effects of Covariates on Crashes at Rural Intersections, 1692
- Kim, Dong-Woo**  
*see* Mu, Bin, 196
- Kim, Eui Sung**  
*see* Oh, Byung Hwan, 545
- Kim, Eungcheol**  
*see* Jha, Manoj K., P.E., 1708
- Kim, G. D.**  
*see* Kwon, Y. B., 1498
- Kim, J. W.**  
Finite-Element Computation of Wave-Structure Interaction between Steep Stokes Waves and Vertical Cylinders, 1886
- Kim, Jae Young**  
*see* Moon, Hee Sun, 709

## AUTHOR INDEX

Klock

- Kim, Jeewoong**  
Removal of Lead from Contaminated Water and Clay Soil using a Biosurfactant, 687
- Kim, Jinkoo**  
Displacement-Based Design of Supplemental Dampers for Seismic Retrofit of a Framed Structure, 1526
- Kim, Jin-Tae**  
Estimation of Uniform Delay of Permitted Left Turns from Exclusive Turn Lanes, 1741
- Kim, Jong-Soon**  
*see Acharya, Nirmal Kumar*, 1383
- Kim, Juwhan**  
Application of Internally Damped Shearbeam Model to Analysis of Buildings under Earthquakes: Robust Procedure for Quick Evaluation of Seismic Performance, 1550
- Kim, Kwang Soo**  
*see Ahn, Chang Hoon*, 701
- Kim, Kwang W.**  
Estimation of RAP's Binder Viscosity using GPC without Binder Recovery, 1324
- Kim, Kwang Yeon**  
*see Parra-Montesinos, Gustavo J.*, 1571
- Kim, Kyongae**  
*see Kim, Kwang W.*, 1324
- Kim, Kyungsik**  
Brace Forces in Steel Box Girders with Single Diagonal Lateral Bracing Systems, 1558
- Interaction of Top Lateral and Internal Bracing Systems in Tub Girders, 1598
- Kim, Lee-Hyung**  
Estimating Pollutant Mass Accumulation on Highways during Dry Periods, 711
- Kim, Moon-Young**  
Spatial Stability of Shear Deformable Nonsymmetric Thin-Walled Curved Beams: A Centroid-Shear Center Formulation, 573
- Kim, Nam-II**  
*see Kim, Moon-Young*, 573
- Kim, Sangdan**  
Generalized Fick's Law and Fractional ADE for Pollution Transport in a River: Detailed Derivation, 1079
- Stochastic Point Rainfall Modeling for Correlated Rain Cell Intensity and Duration, 1073
- Kim, Sung-Bo**  
*see Kim, Moon-Young*, 573
- Kim, Tae H.**  
Exploratory Map Animation for Post-Event Analysis of Wildfire Protective Action Recommendations, 1922
- Kim, Tae-Wan**  
*see Foutch, Douglas A.*, 165
- Kim, Tae-Woong**  
Nonparametric Approach for Bivariate Drought Characterization using Palmer Drought Index, 1084
- Kim, Wooyoung**  
*see Yu, Jung-Ho*, 398
- Kim, Yongjoo**  
Development of Mix Design Procedure for Cold In-Place Recycling with Foamed Asphalt, 1274
- Kim, Young-Jin**  
*see Collick, Amy S.*, 731
- Kim, Young-Oh**  
Combining Rainfall-Runoff Model Outputs for Improving Ensemble Streamflow Prediction, 1130
- Kimura, Shinya**  
*see Takahashi, Naoki*, 834
- Kingsnorth, Oliver**  
*see Gourvenec, Susan*, 27
- Kircher, Charles A.**  
HAZUS Earthquake Loss Estimation Methods, 1927
- Kirkil, Gokhan**  
*see Ettema, Robert*, 934
- Kirsch, Brian R.**  
Equilibrium Approach to Integrating Regional Surface Water Treatment and Limited Groundwater Pumping Capacity, 1847
- Kish, Suzanne M.**  
Long-Term Dynamic Modeling Approach to Quantifying Attached Algal Growth and Associated Impacts on Dissolved Oxygen in the Lower Truckee River, Nevada, 739
- Kishen, J. M. Chandra**  
*see Sain, Trisha*, 469
- Kitamura, Yasushi**  
*see Nakaza, Eizo*, 1858
- Kitinoja, Jari-Pekka**  
*see Perttula, Pia*, 371
- Kitou, Erasmia**  
Transportation Choices and Air Pollution Effects of Telework, 1149
- Kiyohara, Daisuke**  
*see Mizumura, Kazumasa*, 1085
- Kiziltas, Semih**  
*see Akinci, Burcu*, 401
- Kjeldsen, Peter**  
*see Lai, Keith C. K.*, 605
- see Lai, Keith C. K.*, 1966
- see Lai, Keith C. K.*, 1967
- Klakegg, Ole Jonny**  
*see Lædre, Ola*, 356
- Kleinmans, Maarten G.**  
*see Hesseslink, Annika W.*, 945
- Klenke, Marcus**  
*see Leung, Christopher K. Y.*, 484
- Klingler, Mac**  
*see Tatum, C. B.*, 386
- Klingler, Mac G.**  
*see Tatum, C. B., P.E.*, 385
- Klöck, Wolfgang**  
*see Aicher, Simon*, 507

- Kmet, Stanislav  
*Nonlinear Analytical Solution for Cable Truss*, 446
- Knapton, J.  
*see Wilkinson, S. M.*, 104
- Knight, Donald W.  
*see Tang, Xiaonan*, 939
- Knight, Zachary  
*see McCuen, Richard H.*, 1132
- Ko, Ick Hwan  
*see Kim, Young-Oh*, 1130
- Ko, Man-Gi  
*see Jo, Ji-Seong*, 515
- Kober, Aaron, P.E.  
Modifying Merchants Bridge, 2022
- Koch, James E., P.E.  
*see Gransberg, Douglas D.*, 2081
- Kochly, M.  
*see Kijewski-Correa, T.*, 1561
- Kochly, Michael  
*see Kijewski-Correa, Tracy*, 1588
- Kockelman, Kara M., P.E.  
*see Juri, Natalia Ruiz*, 1720
- Kodkani, Shilpa S.  
*see Davalos, Julio F.*, 1346
- Koehn, Enno "Ed", P.E.  
Engineering Experience and Competitions Implement ABET Criteria, 1419
- Koenig, Larry  
*see Suarez, Monica P.*, 770
- Koganeamaru, Kenichi  
*see Shimizu, Yoshihisa*, 801
- Koh, C. G.  
Condensed Model Identification and Recovery for Structural Damage Assessment, 1638
- Kohar, Eugen S.  
*see Wrenn, Brian A.*, 591
- Koide, Yasuhiro  
*see Sakano, Masahiro*, 171
- Kokorudova, Zuzana  
*see Kmet, Stanislav*, 446
- Kolera, Bopanna T.  
Intelligent Utility Locating Tool for Excavators, 379
- Kollár, László  
*see Vigh, Attila*, 132
- Kolton, O.  
*see Navon, R.*, 360
- Kolyshkin, A. A.  
*see Nixon, W.*, 1025
- Köngeter, Jürgen  
*see Rubin, Hillel*, 589
- Konrad, J. M.  
Limit-State Curve of Base-Course Material and Its Relevance for Resilient Modulus Testing, 795
- Konyha, Kenneth D.  
*see Wan, Yongshan*, 1835
- Koo, Han-Mo  
*see Cho, Yon-Ho*, 1760
- Koochzare, Azadeh  
Compilation of a Map of Recent Vertical Crustal Movements in Eastern Canada using Geographic Information System, 1663
- Kopp, Gregory A.  
Database-Assisted Design of Low-Rise Buildings: Aerodynamic Considerations for a Practical Interpolation Scheme, 1529
- Korany, Yasser  
Rehabilitation of Masonry Walls using Unobtrusive FRP Techniques for Enhanced Out-of-Plane Seismic Resistance, 209
- Korhonen, Pekka  
*see Perttula, Pia*, 371
- Korkmaz, Serdar  
Seepage from a Rectangular Ditch to the Groundwater Table, 1192
- Korkut, Eyüp Nafiz  
Wastewater Treatment with Biomass Attached to Porous Geotextile Baffles, 614
- Korman, Thomas M., P.E.  
Prototype Tool for Mechanical, Electrical, and Plumbing Coordination, 249
- Korving, Hans  
Statistical Modeling of the Serviceability of Sewage Pumps, 1039
- Koskela, Lauri  
*see Rischmoller, Leonardo*, 1243
- Koskiahia, Jari  
*see Schmid, Bernhard H.*, 1090
- Kothari, D. P.  
*see Singh, Shikha*, 420
- Kotsakis, Christopher  
Overparameterized Least-Squares Adjustment with Linear Models for Geodetic and Surveying Applications, 1659
- Kouhy, Reza  
*see Ql-Oquili, Osama*, 427
- Koutsourelakis, Phaedon S.  
Simulation of Multidimensional Binary Random Fields with Application to Modeling of Two-Phase Random Media, 496
- Kouwen, N.  
*see Bingeman, A. K.*, 1117
- Kovac, V., P.E.  
*see Shang, J. Q.*, 1277
- Kovoov, Gley M.  
*see Nandagiri, Lakshman*, 1190
- Kracman, D. R.  
Stochastic Optimization of the Highland Lakes System in Texas, 1807

## AUTHOR INDEX

Kumar

- Kramer, Kristian**  
Development of Air Concentration on Chute Spillways, 1023
- Kranc, S. C.**  
*see* Sagüés, A. A., 161
- Kraus, Rudolph N.**  
*see* Naik, Tarun R., 1347
- Kreymborg, Leo R.**  
*see* Hu, Henry H., 1080
- Krick, William**  
*see* Xagorarakis, Irene, 692
- Krishna, M. Sri**  
*see* Chakrabarti, Subrata K., P.E., 1869
- Krishnan, J. Murali**  
Rate-Type Model for Bituminous Mixtures and Its Application to Sand Asphalt, 497
- Thermomechanical Framework for the Constitutive Modeling of Asphalt Concrete, 15
- Krishnan, Swaminathan**  
Modeling Steel Frame Buildings in Three Dimensions. I: Panel Zone and Plastic Hinge Beam Elements, 470
- Modeling Steel Frame Buildings in Three Dimensions. II: Elastofiber Beam Element and Examples, 471
- Krishnappan, Bommanappa G.**  
*see* He, Cheng, 944
- Krishnaswamy, N. R.**  
*see* Latha, G. Madhavi, 14
- Krizek, Raymond J.**  
*see* Schwarz, Lois G., 1284
- Krou, Jean F.**  
Experimental Data and Theoretical Analysis of Particle Removal Efficiency in a Novel Hydraulic Separation Unit, 733
- Krüger, Susanne**  
Modeling 3D Supercritical Flow with Extended Shallow-Water Approach, 1024
- Kruntcheva, Mariana R.**  
Properties of Asphalt Concrete Layer Interfaces, 1312
- Kruse, Jamie B.**  
*see* De Silva, Dakshina G., 1924
- Kruse, Jamie Brown**  
*see* Bin, Okmyung, 1936
- Kruszyna, M.**  
Influence of Pedestrians' Entry Process on Pedestrian Delays at Signal-Controlled Crosswalks, 1757
- Krzyk, Mario**  
*see* Ćetina, Matjaž, 943
- Ku, Young**  
Ozonation of 2-Chlorophenol in Aqueous Solutions with a Packed Contactor, 775
- Kubo, Naritaka**  
*see* Odai, Samuel Nii, 951
- Kudella, M.**  
Large-Scale Experiments on Pore Pressure Generation underneath a Caisson Breakwater, 1884
- see* de Groot, M. B., 1885
- Kuder, Katherine G.**  
New Method to Evaluate the Nailing Performance of Extruded High-Performance Fiber-Reinforced Cementitious Composites for Residential Applications, 1309
- Kudsia, T.**  
*see* Harajli, M. H., 229
- Kuennen, Steven T.**  
*see* Pocock, James B., 325
- Kuhn, Kenneth**  
*see* Madanat, Samer, 1156
- Kuhnle, R. A.**  
Lateral Variations in Suspended Sediment Concentration over Dunes, 1066
- Kuhnle, Roger**  
*see* Li, Hua, 982
- Kulasingam, R.**  
Strength Loss and Localization at Silt Interlayers in Slopes of Liquefied Sand, 7
- see* Malvick, Erik J., 897
- Kullman, Rachel**  
*see* Oad, Ranachand, 1229
- Kumar, Abhilekh**  
*see* Jha, Madan K., 1135
- Kumar, D. Nagesh**  
Optimal Reservoir Operation for Irrigation of Multiple Crops using Genetic Algorithms, 1178
- Kumar, G. Suresh**  
Spatial Moment Analysis for One-Dimensional Non-isothermal Quartz Transport and Dissolution/Precipitation in Fracture-Matrix System, 1106
- see* Sekhar, M., 1104
- Kumar, Jayant**  
Stress Reduction Coefficient and Amplification Factor for Seismic Response of Ground, 26
- Kumar, P. Suresh**  
Wave Interaction with a Flexible Porous Breakwater in a Two-Layer Fluid, 540
- Kumar, Pradeep**  
*see* Gali, Veeresh S., 759
- see* Prashanth, S., 637
- Kumar, Praveen**  
Comparative Study of Different Subbase Materials, 1326
- Kumar, Rakesh**  
*see* Naik, Tarun R., 1347
- see* Sahoo, Bhabagahi, 1124
- Kumar, Ram**  
*see* Pandey, A. K., 1576
- Kumar, Satander**  
*see* Rao, V. V. L. Kanta, 1379
- Kumar, Sudhir**  
*see* Rao, S. V. N., 1118
- Kumar, Sujay V.**  
Optimal Design of Redundant Water Distribution Networks using a Cluster of Workstations, 1840

- Kumara, M. W.  
Evaluation of Early Strength Requirement of Concrete for Slab Replacement using Accelerated Pavement Testing, 1749
- Kumaran, Kumar  
*see* Mukhopadhyaya, Phalguni, 101
- Kumathe, S. S.  
*see* Mishra, P. K., 1196
- Kunde, M. C.  
Effects of Pier and Deck Flexibility on the Seismic Response of Isolated Bridges, 115
- Kunnath, Sashi K.  
*see* Kalkan, Erol, 1609
- Kuo, Chen-Ming  
Three-Dimensional Pavement Analysis with Nonlinear Subgrade Materials, 1321
- Kupferle, Margaret J., P.E.  
Electrolytic Treatment of Azo Dye Wastewaters: Impact of Matrix Chloride Content, 656
- Kura, B.  
Total PM Emission Factors for Steel Grit Used in Dry Abrasive Blasting, 768
- Kurama, Yahya C.  
Experimental Evaluation of Posttensioned Hybrid Coupled Wall Subassemblies, 1538  
*see* Shen, Qiang, 1539
- Kurtović-Folić, Nadja  
*see* Radivojević, Ana, 1341
- Kurup, Pradeep U., P.E.  
Electron Nose — Membrane Interface Probe for Geoenvironmental Site Characterization, 882
- Prediction of Soil Composition from CPT Data using General Regression Neural Network, 272
- Kutay, M. Emin  
Analysis of Factors Affecting Strain Distribution in Geosynthetics, 777
- Kutter, Bruce L.  
*see* Kulasingam, R., 7  
*see* Malvick, Erik J., 897
- Kuźniar, Krystyna  
Neural Networks and Principal Component Analysis for Identification of Building Natural Periods, 279
- Kwasniewski, Leslaw  
Experimental Evaluation of Dynamic Effects for a Selected Highway Bridge, 1391
- Kwigizile, Valerian  
*see* Mussa, Renatus, 1693
- Kwok, Kenny C. S.  
*see* Burton, Melissa D., 1468
- Kwon, Dae-Kun  
*see* Kijewski-Correa, Tracy, 1588
- Kwon, Seokjoon  
*see* Feng, Wenguo, 615
- Kwon, Y. B.  
Experiments of Cold-Formed Steel Connections and Portal Frames, 1498
- Kwon, Yun Han  
*see* Park, Hyo Seon, 1625
- Kyoung, J. H.  
*see* Kim, J. W., 1886
- La Motta, Enrique J.  
*see* Boltz, Joshua P., 655
- Laabs, Walter  
*see* Lee, Ming S., 1790
- Labadie, John W.  
*see* Rieker, Jeffrey D., 1816  
*see* Wan, Yongshan, 1835
- LaBoube, Roger A., P.E.  
*see* Bae, Sang-Wook, 87
- Labuz, J. F.  
*see* Fakhimi, A., 31
- Labuz, Joseph F.  
*see* Bentler, Joseph G., 875
- Lacidogna, Giuseppe  
*see* Carpenteri, Alberto, 1605
- Lackey, Thomas  
*see* Bennmokrane, Brahim, 126
- Lackner, Roman  
*see* Pichler, Christian, 1534
- Ladd, Brian E., P.E.  
*see* Ciancia, Andrew J., P.E., 1985
- Lade, Paul V., ed.  
Geomechanics II — Testing, Modeling, and Simulation, 2069
- Laefer, Debra F.  
Evacuation Route Selection Based on Tree-Based Hazards using Light Detection and Ranging and GIS, 1695
- Lai, C. H.  
Simulation of Lead Ions Adsorption onto the Iron-Coated Medium: Dependent on Temperature and pH, 1942
- Lai, Carlo G.  
*see* Presti, Diego C. F. Lo, 800
- Lai, Han  
Chromium Redox Chemistry in Drinking Water Systems, 694
- Lai, Keith C. K.  
Field Monitoring of a Permeable Reactive Barrier for Removal of Chlorinated Organics, 605
- Natural Gradient Tracer Test for a Permeable Reactive Barrier in Denmark. I: Field Study of Tracer Movement, 1966
- Natural Gradient Tracer Test for a Permeable Reactive Barrier in Denmark. II: Spatial Moments Analysis and Dispersion of Conservative Tracer, 1967  
*see* Irene, M. C. Lo, ed., 2097
- Lai, Natalia T. N.  
*see* Chan, Andy T., 444
- Lai, Peter  
*see* Hu, Zhihong, 820

## AUTHOR INDEX

Laufer

- Lai, Sheng-Yao  
Logistic Regression Model for Evaluating Soil Liquefaction Probability using CPT Data, 843
- Lai, Xiaorong  
*see* Liu, Ying, 1751
- Laird, Carl D.  
Mixed-Integer Approach for Obtaining Unique Solutions in Source Inversion of Water Networks, 1826
- Lakota, Gregory J., P.E.  
A Good Move, 2037
- Lakshmanan, N.  
*see* Peter, J. Annie, 1305  
*see* Sasmal, Saptarshi, 1392
- Lam, E. S. S.  
*see* Yu, T., 233
- Lam, F.  
*see* Leijten, A. J. M., 1568
- Lam, I.  
*see* Serrette, R., 1497
- Lam, K. C.  
*see* Tang, C. M., 397
- Lam, K. M.  
Global Behaviors of a Round Buoyant Jet in a Countercflow, 991
- Lam, L.  
*see* Teng, J. G., 9
- Lam, Lik  
*see* Teng, J. G., 198
- Lam, Manfred C. M.  
*see* Hui, Eddie C. M., 1780
- Lam, S. S. E.  
*see* Li, C. S., 1610
- Lam, Try  
New Approach to Mission Design Based on the Fundamental Equations of Motion, 65
- Laman, J.  
*see* Nevling, D., 120
- Lamanna, Anthony J.  
*see* Lok, Mustafa S., 1393
- Lambert, Laurence, P.E.  
*see* Woloshon, Brian, P.E., 1766
- Lambert, Martin  
*see* Vítkovský, John, 1001
- Lambert, Martin F.  
*see* Vítkovský, John P., 1000
- Lamberti, Alberto  
*see* Zanuttigh, Barbara, 1856
- Lan, André, P.E.  
Validation of Shoring Made of HDPE Pipe or CGS Pipe Normally Used for Culverts and Sewers, 1974
- Lancelot, Laurent  
Failure and Dilatancy Properties of Sand at Relatively Low Stresses, 582
- Landers, Jay  
Moving On, 2018
- New Life for Onondaga Lake, 2014
- Landis, Eric N.  
Toward a Physical Damage Variable for Concrete, 512
- Landolfo, Raffaele  
Seismic Behavior of Sheathed Cold-Formed Structures: Physical Tests, 1495
- see* Corte, Gaetano Della, 1494
- Lane, W. L.  
*see* Salas, J. D., 1177
- Lang, Timothy E.  
*see* Hahn, Daniel E., P.E., 2024
- Lange, Clifford R.  
Commercial Odor-Reducing Agents for Minimizing the Odor Potential of Asphalt Binders, 645
- Lange, Jorg, ed.  
*see* Leon, Roberto T., ed., 2057
- Langford, David  
*see* Yi, Kyoo-Jin, 351
- Langue, Jennifer L.  
*see* Minchin, R. Edward, Jr., 1242
- Lansey, Kevin  
*see* Yoo, H. Harold, 674
- Lansey, Kevin E.  
*see* Müller, Jennifer H., 732
- Laosiriphong, Krit  
Theoretical and Experimental Analysis of GFRP Bridge Deck under Temperature Gradient, 153
- Lapinski, Anthony R.  
Lean Processes for Sustainable Project Delivery, 395
- Larkin, Tam  
Reliability of Shallow Foundations Subjected to Multi-directional Seismic Loading, 842
- Larouche, Bruno  
*see* Lavallée, Stéphane, 1808
- Larson, Kyle H.  
*see* Rasheed, Hayder A., 231
- Larson, Magnus  
*see* Camenen, Benoit, 1048
- Larson, Steven L.  
*see* Hwang, Sangchul, 610
- Lasdon, L. S.  
*see* Kracman, D. R., 1807
- Lasseigne, Mark, P.E.  
*see* Kober, Aaron, P.E., 2022
- Laterza, Michelangelo  
*see* Braga, Franco, 1577
- Latha, G. Madhavi  
Experimental and Theoretical Investigations on Geocell-Supported Embankments, 14
- Lau, Sim-Lin  
*see* Khan, Sabbir, 629  
*see* Li, Yingxia, 695
- Laufer, Alexander  
*see* Telem, Dory, 403

- Laughton, Chris, P.E.  
*see* Bruen, Michael P., 2004
- Lauzon, Robert G.  
Ambient Vibration Monitoring of a Highway Bridge Undergoing a Destructive Test, 163
- Lav, A. Hilmü  
*see* Goktepe, A. Burak, 287
- Lavallée, Stéphane  
Monitoring Snow-Cover Depletion by Coupling Satellite Imagery with a Distributed Snowmelt Model, 1808
- Lavania, Amit  
Effect of Metallic Iron Concentration on End-Product Distribution during Metallic Iron-Assisted Auto-trophic Denitrification, 712
- Lavé, Jérôme  
*see* Attal, Mikaël, 994
- Lavelle, Francis M.  
*see* Vickery, Peter J., 1931
- Law, S. S.  
Structural Damage Detection from Wavelet Coefficient Sensitivity with Model Errors, 547
- Vehicle Condition Surveillance on Continuous Bridges Based on Response Sensitivity, 442  
*see* Bu, J. Q., 579  
*see* Lu, Z. R., 544
- Lawrence, Gregory A.  
*see* Fisher, Timothy S. R., 640
- Lawrence, Michael  
*see* Scawthorn, Charles, 1929
- Lazarowitch, N.  
Soil Hydraulic Properties Affecting Discharge Uniformity of Gravity-Fed Subsurface Drip Irrigation Systems, 1225
- Lædre, Ola  
Procurement Routes in Public Building and Construction Projects, 356
- Leal, João Gouveia Aparício Bento  
Dam-Break Wave-Front Celerity, 938
- Leavesley, George  
*see* Frevert, Donald, 1174
- LeBlanc, Michel  
*see* Chaillal, Omar, 189
- LeBoeuf, Denis, P.E.  
*see* Lan, André, P.E., 1974
- LeBoeuf, E. J., P.E.  
*see* Baranowski, T. M., 1829
- Lecampion, Brice  
Identification of Poroelastic Constants of "Tight" Rocks from Laboratory Tests, 33
- Leccese, Maura  
Distortional Buckling of Cold-Formed Stainless Steel Sections: Experimental Investigation, 1488
- Distortional Buckling of Cold-Formed Stainless Steel Sections: Finite-Element Modeling and Design, 1489
- Lechman, Jeremy  
Hysteresis of Matric Suction and Capillary Stress in Monodisperse Disk-Shaped Particles, 490
- Lecina, S.  
Model for the Simulation of Water Flows in Irrigation Districts. I: Description, 1199
- Model for the Simulation of Water Flows in Irrigation Districts. II: Application, 1200
- Leconte, Robert  
*see* Lavallée, Stéphane, 1808
- Ledbetter, Stephen R.  
Structural Use of Glass, 98
- Lee, C. F.  
*see* Pradhan, B., 36
- Lee, C. R.  
System Identification of Partially Restrained Composite Plates using Measured Natural Frequencies, 521
- Lee, C. T.  
*see* Seracino, R., 1460
- Lee, Chi-King  
*see* Lie, Seng-Tjhen, 1475  
*see* Lie, Seng-Tjhen, 1476
- Lee, Chung-Kung  
*see* Lin, Kuen-Song, 1956
- Lee, Dae Sung  
*see* Elsworth, Derek, 915
- Lee, Der-Horng  
*see* Zheng, Weizhong, 1675
- Lee, Dong-Eun  
Automated Statistical Analysis in Stochastic Project Scheduling Simulation, 315
- Construction Business Automation System, 296
- Total Quality Performance of Design/Build Firms using Quality Function Deployment, 292
- Lee, Duu-Jong  
*see* Chen, Liang-Chuan, 756  
*see* Show, Kuan-Yeow, 1267
- Lee, Eul-Bum  
Fast-Track Urban Freeway Rehabilitation with 55-H Weekends Closures: I-710 Long Beach Case Study, 334
- Lee, Eul-Bum, P.E., P.M.P.  
Implementation of Automated Travel-Time Information and Public Reaction on Urban Highway Rehabilitation, 1752
- Lee, Hojung  
*see* Lee, Eul-Bum, 334
- Lee, Hong-Yuan  
Quantitative Estimation of Reservoir Sedimentation from Three Typhoon Events, 1109
- Lee, Hosin "David"  
*see* Kim, Yongjoo, 1274
- Lee, Hyun-Soo  
*see* Yu, Jung-Ho, 398
- Lee, In-Won  
*see* Jo, Ji-Seong, 515

## AUTHOR INDEX

Leong

- Lee, J. H. W.  
*see* Jayawardena, A. W., 1070
- Lee, Lam, K. M., 991
- Lee, Jong Seh  
*see* Wang, Xingzhe, 476
- Lee, Jong-Seok  
Downstream Hydraulic Geometry of Alluvial Channels, 1067
- Electromagnetic Wave Surface Velocimetry, 946
- Lee, Joseph H. W.  
*see* Yu, Daeyoung, 1027
- Lee, K. W.  
*see* Jung, Chang H., 741
- Lee, K. Wayne, P.E., ed.  
Asphalt Mix Design and Construction: Past, Present, and Future, 2050
- Lee, Kenneth  
*see* Wrenn, Brian A., 591
- Lee, Kevin Z. Z.  
*see* Wu, Jonathan T. H., 855
- Lee, Kihak  
Seismic Evaluation of Steel Moment Frame Buildings Designed using Different R-Values, 1583
- Lee, Kwan Tun  
Bridge Blockage and Overbank Flow Simulations using HEC-RAS in the Keelung River during the 2001 Nari Typhoon, 963
- Lee, Kwanghun  
*see* Lee, Seunghak, 632
- Lee, M. S.  
*see* Yeh, T. Y., 1963
- Lee, Marcus M. K.  
Design Equation for Offshore Overlap Tubular K-Joints under In-Plane Bending, 1545
- Lee, Ming S.  
Modeling Network Traffic for Planning Applications in a Small Community, 1790
- Lee, P. K. K.  
*see* Yang, J., 779
- Lee, Sang-Beom  
*see* Cho, Young-Jun, 1422
- Lee, Sang-Hoon  
*see* Matthews, Benjamin, 1259
- Lee, SangHyun  
Reliability and Stability Buffering Approach: Focusing on the Issues of Errors and Changes in Concurrent Design and Construction Projects, 333
- Web-Enabled System Dynamics Model for Error and Change Management on Concurrent Design and Construction Projects, 273
- Lee, Sangsoo  
Actuated Signal Operations of Congested Diamond Interchanges, 1750
- Lee, Seunghak  
Simultaneous Removal of Cd and Cr(VI) using Fe-Loaded Zeolite, 632
- Lee, Seung-hyun  
*see* Ellis, Ralph D., Jr., 319
- Lee, Sung C.  
*see* Yoo, Chai H., 1595
- Lee, Vincent W.  
Antiplane (SH) Waves Diffraction by a Semicircular Cylindrical Hill Revisited: An Improved Analytic Wave Series Solution, 550
- Lee, W. Y.  
*see* Lam, K. M., 991
- Lee, Young-Dai  
*see* Acharya, Nirmal Kumar, 1383
- Lee, Yusin  
*see* Cheng, Juey-Fu, 1764
- Léger, Pierre  
Structural Stability of Concrete Gravity Dams Strengthened by Rockfill Buttressing: Hydrostatic Load, 926
- Lehane, B. M.  
*see* McCabe, B. A., 814
- Lehtelä, Jouni  
*see* Perttula, Pia, 371
- Lei, Li  
Bioavailability Prediction of Polycyclic Aromatic Hydrocarbons in Field-Contaminated Sediment by Mild Extractions, 626
- Lei, W.  
*see* Baskaran, A., 100
- Leijten, A. J. M.  
Reversed-Cyclic Behavior of a Novel Heavy Timber Tube Connection, 1568
- Lembo, Arthur J., Jr.  
*see* Davidson, Rachel A., 425
- Lennon, J. M.  
Particle Image Velocity Measurements of Undrained and Hydraulic Jumps, 1060
- Lenwari, Akhrawat  
Debonding Strength of Steel Beams Strengthened with CFRP Plates, 195
- León, Arturo S.  
Godunov-Type Solutions for Transient Flows in Sewers, 1010
- Leon, Evangelia  
Accounting for Soil Aging When Assessing Liquefaction Potential, 811
- Leon, Roberto T., ed.  
Composite Construction in Steel and Concrete V, 2057
- see* Moon, Franklin L., 1506
- see* Yi, Tianyi, 1504
- see* Yi, Tianyi, 1505
- Leone, M.  
*see* Aiello, M. A., 1340
- Leong, E. C.  
*see* Yang, H., 1105
- Leong, Eng-Choon  
*see* Thu, Trinh Minh, 815

- Leoni, Graziano  
*see* Dezi, Luigino, 1573
- Lertworawanich, Ponlathep  
*see* Pietrucha, Martin T., P.E., 1758
- Leshchinsky, Dov  
*see* Han, Jie, P.E., 909
- Leshem, Ehud N.  
Electrochemical Oxidation and Ozonation for Textile Wastewater Reuse, 619
- Leskinen, Timo  
*see* Perttila, Pia, 371
- Leslie, Della  
*see* Shimada, Masashi, 961
- Leštan, Domen  
*see* Finžgar, Neža, 740
- Lestari, Wahyu  
Dynamic Characteristics and Effective Stiffness Properties of Honeycomb Composite Sandwich Structures for Highway Bridge Applications, 203
- Lettenmaier, Dennis P.  
*see* McGuire, Marketa, 1811
- Letterman, Raymond D., P.E.  
*see* Anand, Gunwant Singh, 634
- Lettieri, M.  
*see* Frigione, M., 1344
- Leu, Liang-Jenq  
Strut-and-Tie Design Methodology for Three-Dimensional Reinforced Concrete Structures, 1531
- Leu, Mark R.  
*see* Marques, Guilherme F., 1849
- Leukart, Michael  
Identification and Interpretation of Microplane Material Laws, 465
- Leung, A. Y. T.  
*see* Tang, C. M., 397
- Leung, C. E.  
*see* Ong, D. E. L., 780
- Leung, C. F.  
Pile Behavior Due to Excavation-Induced Soil Movement in Clay. II: Collapsed Wall, 781
- Leung, Christopher K. Y.  
Determination of Nonlinear Softening Behavior at FRP Composite/Concrete Interface, 484
- Empirical Approach for Determining Ultimate FRP Strain in FRP-Strengthened Concrete Beams, 201
- Energy-Based Modeling Approach for Debonding of FRP Plate from Concrete Substrate, 492
- Three-Parameter Model for Debonding of FRP Plate from Concrete Substrate, 485
- Leung, Susanna M.  
Air/Water Oxygen Transfer in a Biological Aerated Filter, 603
- Levantesi, Caterina  
*see* Louarn, Essylt, 705
- Levasseur, Béatrice  
Metals Removal from Municipal Waste Incinerator Fly Ashes and Reuse of Treated Leachates, 654
- Leverson, Verne  
*see* Singh, Vijay P., 1175
- Levinson, David M.  
*see* Chen, Wenling, 1410
- Levy, Guy J.  
*see* Gruber, Ellen R., 1282
- Li, Binwei  
*see* Zhou, Ping, 597
- Li, C. S.  
Shaking Table Test of a 1:20 Scale High-Rise Building with a Transfer Plate System, 1610
- Li, Chaokui  
*see* Zhou, Guoqing, 1782
- Li, D. Q.  
*see* Zhang, L. M., 835
- Li, Heng  
*see* Cheng, Eddie W. L., 370
- see* Zhang, Hong, 259
- see* Zhang, Hong, 314
- see* Zhang, Hong, 413
- Li, Hongyi  
*see* Kwasniowski, Leslaw, 1391
- Li, Hua  
Parallel Walls as an Abutment Scour Countermeasure, 982
- Li, Huajun  
Modal Strain Energy Decomposition Method for Damage Localization in 3D Frame Structures, 533
- see* Hu, Sau-Lon James, 477
- Li, J.  
Forecasting Project Status by using Fuzzy Logic, 406
- Li, James Y.  
*see* Behera, Pradeep K., 1801
- Li, Jian  
*see* Zhang, Yunfeng, 275
- Li, Long-Hai  
*see* Wang, Kun, 1937
- Li, Min-Tang  
Assignment of Seasonal Factor Categories to Urban Coverage Count Stations using a Fuzzy Decision Tree, 1735
- Li, Qian-Rong  
*see* Zhang, Shu-Juan, 755
- Li, Qingming  
*see* Ma, Guowei, 461
- Li, Rong  
*see* Teng, J. G., 198
- Li, Ruimin  
Evaluation of Speed-Based Travel Time Estimation Models, 1721
- Li, Sherman  
*see* Pserng, H. Ping, 327
- Li, X. Y.  
*see* Law, S. S., 547

## AUTHOR INDEX

Lin

- Li, Y. S.  
Chebyshev Finite-Spectral Method for 1D Boussinesq-Type Equations, 1876
- Li, Yadong, P.E.  
TCLP Heavy Metal Leaching of Personal Computer Components, 638
- Li, Yanfeng  
*see* Briaud, Jean-Louis, 788
- Li, Yi  
Continuous Cometabolic Transformation of 4-Chlorophenol in the Presence of Phenol in a Hollow Fiber Membrane Bioreactor, 617
- Li, Yingxia  
Dynamic Characteristics of Particle Size Distribution in Highway Runoff: Implications for Settling Tank Design, 695
- Li, Zhong-Xian  
Application of Cement-Based Piezoelectric Sensors for Monitoring Traffic Flows, 1724
- Li, Zongjin  
*see* Li, Zhong-Xian, 1724
- Wei, Xiaosheng, 1272
- see* Zhou, Xiangming, 450
- Liang, Jianhai  
*see* Shi, Xing, 92
- Liang, Jianwen  
*see* Lee, Vincent W., 550
- Liang, L.  
*see* Kavvas, M. L., 1099
- Liang, Robert  
Quality Control Method for Pile Driving, 879
- see* Yang, Ke, 910
- Liang, Shih-Hsun  
*see* Valdes, Julio R., 858
- Liang, Xuemei  
*see* Attanayake, Upul, 156
- Liao, Jen-Cheng  
*see* Lin, San-Shyan, 923
- Liao, Jyh-Jong  
*see* Wang, Cheng-Der, 12
- Liao, Ying-Po  
*see* Leu, Liang-Jeng, 1531
- Liaoli, Katherine A.  
*see* Kim, Changwan, 262
- Liau, Chi-Chou  
*see* Lin, Deng-Fong, 853
- Lichtwardt, Mark, P.E.  
*see* Fischer, Paul, P.E., 2043
- Lie, Seng-Tjen  
Static Strength of Cracked Square Hollow Section T-Joints under Axial Loads. I: Experimental, 1475  
Static Strength of Cracked Square Hollow Section T-Joints under Axial Loads. II: Numerical, 1476
- Liedl, R.  
*see* Wöhling, Th., 1206
- Lien, C. Y.  
Treatment of Polishing Wastewater from Semiconductor Manufacturer by Dispersed Air Flotation, 588
- Lien, Hsing-Lung  
Oxidative and Reductive Degradation of Mixed Contaminants by Bifunctional Aluminum, 1944
- Likos, William J.  
*see* Lu, Ning, 791
- Lim, Yun-Mook  
*see* Kim, Juwhan, 1550
- Lima, D. C.  
*see* Mendonça, A. A., 1276
- Limpetepakarn, Terdkiat  
*see* Arockiasamy, Madasamy, 1366
- Lin, Bin  
*see* Babcock, Roger, Jr., 696
- Lin, Chang  
Laboratory Observation of Solitary Wave Propagating over a Submerged Rectangular Dike, 488
- Lin, Chia-Iuei  
*see* Chao, Keh-Ping, 657
- Lin, Chi-Chang  
Optimal  $H_\infty$  Output Feedback Control Systems with Time Delay, 549
- Lin, Ching-Long  
*see* Yue, Wusi, 996
- Lin, Chiou-Liang  
Effect of Pressure Fluctuations on the Quality of Fluidization and on the Generation of Particulate Matters during Incineration, 708
- Lin, Deng-Fong  
Factors Affecting Portable Falling Weight Deflectometer Measurements, 853
- Lin, Guoming, P.E., ed.  
*see* Han, Jie, P.E., ed., 2045
- Lin, Han  
Single Hardening Elasto-Plastic Model for Kaolin Clay with Loading-History-Dependent Plastic Potential Function, 17
- Strain Localization in Combined Axial-Torsional Testing on Kaolin Clay, 489
- Lin, Huan  
Coupled Surge-Heave Motions of a Moored System. I: Model Calibration and Parametric Study, 501
- see* Yim, Solomon C. S., 502
- Lin, Hung-Ta  
*see* Ju, Shen-Haw, 825
- Lin, Jason  
*see* Vickery, Peter J., 1930
- see* Vickery, Peter J., 1931
- Lin, Jen-Jia  
Shifts in Activity Centers along the Corridor of the Blue Subway Line in Taipei, 1773
- Lin, Jin-Ping  
*see* Zhu, Jian-Hang, 722

- Lin, Jyh-Dong**  
*see* Lin, Deng-Fong, 853
- Lin, Kuen-Song**  
Gasification of Aromatic Volatile Organic Compounds Generated from Petroleum and Refinery Industries with Syngas Recycling, 1956
- Lin, Laiin-Shin**  
*see* Blatchley, Ernest R., III, 742
- Lin, Mu-Xing**  
*see* Ku, Young, 775
- Lin, Pei-Wei**  
*see* Jou, Yow-Jen, 1794
- Lin, Pengzhi**  
Turbulent Boundary Layer Flows above a Porous Surface Subject to Flow Injection, 553
- Lin, Ping-Sien**  
*see* Lai, Sheng-Yao, 843
- Lin, San-Shyan**  
Lateral Response Evaluation of Single Piles Using Inclinometer Data, 923
- Lin, Shiou-Gwo**  
Single Epoch Kinematic GPS Positioning Technique in Short Baseline, 1647
- Lin, T. T.**  
Microanalytical Characterizations of Eroded and Slaked Mudstone Proposed as Landfill Liner Material, 1953  
*see* Lai, C. H., 1942
- Lin, T. Y.**  
*see* Weng, Chih-Huang, 1959
- Lin, Tzu-Kang**  
Active Control with Optical Fiber Sensors and Neural Networks. I: Theoretical Analysis, 1566  
Active Control with Optical Fiber Sensors and Neural Networks. II: Experimental Verification, 1567
- Lin, Ying-Tien**  
*see* Lee, Hong-Yuan, 1109
- Lin, Yu-Chin**  
*see* Chen, Hung-Ming, 260
- Lin, Yung-Bin**  
*see* Lin, Tzu-Kang, 1566  
*see* Lin, Tzu-Kang, 1567
- Lin, Yun-Huin**  
Simultaneous Removal of Carbon and Nitrogen from Swine Wastewater using an Immobilized-Cell Reactor, 630
- Linden, Karl G.**  
*see* Bohnerova, Zuzana, 760  
*see* Jin, Shanshan, 693  
*see* Mamane, Hadass, 666  
*see* Mamane, Hadass, 667
- Lindner, Angela S.**  
*see* McLean, Amanda, 1945
- Ling, Florence Yean Yng**  
Determinants of International Architectural, Engineering, and Construction Firms' Project Success in China, 309
- Incorporating Contractual Incentives to Facilitate Relational Contracting, 1412
- Ling, Hoe I.**  
Unified Sand Model Based on the Critical State and Generalized Plasticity, 580  
*see* Kawabata, Toshinori, 903
- Lingard, Helen**  
*see* Dainty, Andrew R. J., 1250
- Lings, Martin L.**  
*see* Dietz, Matthew S., 914
- Linker, Lewis C.**  
*see* Wang, Ping, 625
- Lins, Harry**  
*see* Frevert, Donald, 1174
- Linzell, D.**  
*see* Nevling, D., 120
- Linzell, Daniel G.**  
*see* Kayser, Caroline R., 114
- Liong, Shie-Yui**  
*see* Atiquzzaman, Md., 1813
- Liou, Jin-Cheng**  
*see* Chang, Hsien-Kuo, 1857
- Lisq, Kim Robert**  
*see* Meløyund, Vivian, 1618
- Liston, R.**  
*see* Shoop, S., 857
- Litrico, X.**  
Tuning of Robust Distant Downstream PI Controllers for an Irrigation Canal Pool. I: Theory, 1204  
Tuning of Robust Distant Downstream PI Controllers for an Irrigation Canal Pool. II: Implementation Issues, 1205
- Little, D. N.**  
*see* Krishnan, J. Murali, 497
- Little, Dallas**  
*see* Dessouky, Samer, 451  
*see* Masad, Sanaa, 1698
- Little, Dallas N.**  
*see* Krishnan, J. Murali, 15
- Little, Dallas N., P.E.**  
*see* Hefer, Arno W., 1350
- Little, John C.**  
*see* Leung, Susanna M., 603
- Litwack, Howard S.**  
Development of a Simple Phosphorus Model for a Large Urban Watershed: A Case Study, 642
- Liu, Bin**  
*see* Fang, Hongwei, 1053
- Liu, Chia-Nan**  
Mapping Liquefaction Potential Considering Spatial Correlations of CPT Measurements, 886
- Liu, Dajin**  
Design of Circular Base Plates, 1970
- Liu, Dawei**  
*see* Okazaki, Taichiro, 1570

## AUTHOR INDEX

Loh

- Liu, Feng  
*see* Guo, Bing, 1572
- Liu, Hai-Jun  
*see* Wang, Qing-Gai, 1185
- Liu, I. S. T.  
Moment Redistribution in FRP and Steel-Plated Reinforced Concrete Beams, 200
- Tests on the Ductility of Reinforced Concrete Beams Retrofitted with FRP and Steel Near-Surface Mounted Plates, 199
- Liu, J. C.  
*see* Lien, C. Y., 588
- Liu, Judy  
*see* Chung, Wonseok, 122
- Liu, L. Y.  
*see* Su, Y. Y., 410
- Liu, Liang Y.  
*see* East, E. William, 416
- Liu, Min  
Genetic Algorithm Based Construction-Conscious Minimum Weight Design of Seismic Steel Moment-Resisting Frames, 1444
- Optimizing Bridge Network Maintenance Management under Uncertainty with Conflicting Criteria: Life-Cycle Maintenance, Failure, and User Costs, 1620
- Liu, Ming  
Probability-Based Bridge Network Performance Evaluation, 167
- Liu, Minnan  
Mean Flow and Turbulence Structure in Vertical Slot Fishways, 1007
- Liu, Nan  
Optimal Siting of Fire Stations using GIS and ANT Algorithm, 286
- Liu, Ning  
Influence of Nonplastic Fines on Shear Wave Velocity-Based Assessment of Liquefaction, 878
- Liu, Pan  
*see* Peng, Dingzhi, 1087
- Liu, R.  
*see* Zheng, Y. H., 1865
- Liu, Rong  
Determination of Stress Intensity Factors for a Cracked Shell under Bending with Improved Shell Theories, 60
- Liu, Shi-Ping  
*see* Wang, Qing-Gai, 1185
- Liu, Songyu  
*see* Hong, Zhenshun, 806
- Liu, Ting  
*see* Peng, Dingzhi, 1087
- Liu, Wen-Cheng  
*see* Hsu, Ming-Hsi, 992
- Liu, X. L.  
*see* Huang, Z., 109
- Liu, Xiaoli  
*see* Abichou, Tarek, 919
- Liu, Yi  
*see* Dawe, J. L., 1511
- Liu, Yigang  
*see* Grubb, Dennis G., 830
- Liu, Ying  
Two-Level Integrated Optimization System for Planning of Emergency Evacuation, 1751
- Liu, Yu-Cheng  
*see* Huang, Jin H., 526
- Liu, Yumin  
*see* Ma, Guowei, 461
- Liu, Zhen-Shu  
Control of PAHs from Incineration by Activated Carbon Fibers, 650
- Liu, Zhi-Ping  
*see* Zhao, Can-Hua, 937
- Livadiotti, Emmanuel  
*see* Tricaud, Etienne, 2042
- Lizundia, Bret  
Regenesis, 2029
- Llenín, José A.  
Construction Management of a Small-Scale Accelerated Pavement Testing Facility, 1388
- Lloyd, B. J.  
*see* Ganesharajah, K., 1036
- Lo, D. C.  
Numerical Simulation of Solitary Waves using Velocity-Vorticity Formulation of Navier-Stokes Equations, 456  
*see* Tsai, C. C., 467
- Lo, Irene M. C.  
*see* Hu, Jing, 679
- see* Hu, L. M., 1943
- see* Lai, Keith C. K., 605
- see* Lai, Keith C. K., 1966
- see* Lai, Keith C. K., 1967
- see* Tsang, Daniel C. W., 1958
- see* Zhang, Weihua, 730
- Lo, Tommy Y.  
Construction Delays in Hong Kong Civil Engineering Projects, 352
- Loáiciga, Hugo A.  
Probability Density Functions in the Analysis of Hydrologic Conductivity Data, 1116
- Lobo-Guerrero, Sebastian  
Application of Weibull Statistics to the Tensile Strength of Rock Aggregates, 850
- Visualization of Crushing Evolution in Granular Materials under Compression using DEM, 32  
*see* Vallejo, Luis E., 56
- Loehlein, Werner C., P.E., ed.  
*see* Zimbelman, Dorell, P.E., ed., 2078
- Loh, Kai-Chee  
*see* Li, Yi, 617
- Loh, P. K.  
*see* Chua, D. K. H., 284

- Loizeaux, Mark**  
Progressive Collapse — An Implosion Contractor's Stock in Trade, 1405
- Loizos, A.**  
Evaluation of Foamed Asphalt Cold In-Place Pavement Recycling Using Nondestructive Techniques, 1770
- Lok, Mustafa S.**  
Study of Turkish Bridge Standards Involving a Reinforced Concrete Arch Bridge, 1393
- Lollar, Barbara Sherwood**  
*see* Béranger, Sandra C., 681
- Long, Cameron M.**  
*see* Coulibaly, Kapo M., 1095
- Long, J.**  
*see* Eisinger, D. S., 1756
- López, Isabel**  
Mechanical Properties and Environmental Assessment of Mortars Containing Metallic Oxides, 706
- Lopez, Maria**  
*see* Cole, Thomas A., 145
- Lopez, Ramon**  
*see* Touran, Ali, 373
- Lorentz, Juliana F.**  
*see* Melo, André L. O., 1652
- Lorenzo, Glen A.**  
Fundamental Characteristics of Cement-Admixed Clay in Deep Mixing, 1279
- Louarn, Essyllt**  
Modeling Substrate Interactions during Aerobic Biodegradation of Mixtures of Vinyl Chloride and Ethene, 705
- Loukili, Ahmed**  
*see* Turc, Philippe, 1266
- Loulizi, Amara**  
Difference between In Situ Flexible Pavement Measured and Calculated Stresses and Strains, 1725
- Lourengo, Paulo**  
*see* Milani, Gabriele, 1602
- Love, Nancy G.**  
*see* Leung, Susanna M., 603  
*see* Yi, Taewoo, 757
- Low, B. K.**  
*see* Xu, B., 911
- Low, Sui-Pheng**  
*see* Chong, Wai-Kiong, 1386
- Lowe, David J.**  
Predicting Construction Cost using Multiple Regression Techniques, 362
- Lowry, Gregory V.**  
*see* Murphy, Paul, 688
- Lu, M.-C.**  
Effect of Chloride Ions on the Dechlorination of Hexachlorobenzene in the Presence of Zero-Valent Iron, 1965
- Lu, Ming**  
Application Framework for Mapping and Simulation of Waste Handling Processes in Construction, 408
- Lu, Ning, ed.**  
Advances in Unsaturated Soil, Seepage, and Environmental Geotechnics, 2046
- Suction Stress Characteristic Curve for Unsaturated Soil, 791**
- see* Lechman, Jeremy, 490
- Lu, Shuan-Chai**  
*see* Hsu, Tung-Wen, 480
- Lu, Wei-Cheng**  
*see* Wu, Jong-Cheng, 1448
- Lu, Wei-Sheung**  
*see* Shen, Li-Yio, 329
- Lu, Z. R.**  
Force Identification Based on Sensitivity in Time Domain, 544  
*see* Law, S. S., 547
- Lucko, Gunnar**  
Statistical Considerations for Predicting Residual Value of Heavy Equipment, 359
- Lui, Roger**  
*see* Pyzocha, Michael J., 703
- Luk, Herman C. Y.**  
*see* Leung, Christopher K. Y., 201  
*see* Leung, Christopher K. Y., 484
- Luketina, David**  
*see* Sahoo, Goloka Behari, 682
- Lum, K. M.**  
*see* Qiu, Y. F., 1768
- Luna, Ronaldo, ed.**  
Soil and Rock Behavior and Modeling, 2088
- Lund, Jay R.**  
Drought Storage Allocation Rules for Surface Reservoir Systems, 1842  
*see* Alcubilla, Roberto Garcia, 1845  
*see* Marques, Guilherme F., 1849  
*see* Rosenberg, David E., 1803
- Lund, Ryan**  
*see* Alampalli, Sreenivas, 176
- Luo, Hao**  
*see* Lee, Vincent W., 550
- Lupo, Alessio**  
*see* Lupoi, Giorgio, 473
- Lupo, Giorgio**  
Seismic Fragility Analysis of Structural Systems, 473
- Lutenegeger, A. J., P.E.**  
*see* Cerato, A. B., 916
- Lyles, Richard W., P.E.**  
*see* Salama, Hassan K., 1747
- Lyn, Dennis A.**  
*see* Blatchley, Ernest R., III, 742

## AUTHOR INDEX

## Mäkimattila

- Lynett, Patrick J.  
Nearshore Wave Modeling with High-Order Boussinesq-Type Equations, 1887
- Lyon, Richard E.  
*see* Giancaspro, James, 1303
- Lyons, D. J.  
*see* Guganesharajah, K., 1036
- Lyons, Terrence  
Evaluation of Contaminant Resuspension Potential during Cap Placement at Two Dissimilar Sites, 639
- Lytton, R. L.  
*see* Oh, Jeong-Ho, 1711
- Ma, Guowei  
Numerical Simulations of Dynamic Instability of Elastic-Plastic Beams, 461  
*see* Luna, Ronaldo, ed., 2088
- Ma, Jun  
*see* Petersen, Elijah J., 627
- Ma, June  
*see* Davidson, Rachel A., 425
- Ma, Tian-Wei  
Sampled Data Feedback-Feedforward Control of Structures with Time Delays, 1549
- Ma, X.  
*see* Xiong, G. J., tu.edu.cn, 215
- Macbeth, Tamzen W.  
*see* Dettmers, Dana L., 1952
- MacDougall, Colin  
Fatigue Damage of Steel Bridges Due to Dynamic Vehicle Loads, 135
- Mechanical Model for Unbonded Seven-Wire Tendon with Single Broken Wire, 576
- Macfarlane, Eric C., P.E.  
*see* O'Donnell, Brian, P.E., 2023
- Machdar, Izarul  
*see* Tandukar, Madan, 601
- Machemehl, Randy B.  
*see* Fan, Wei, 1667  
*see* Fan, Wei, 1676
- Machotka, Radovan  
*see* Vondrak, Jiri, 1650
- Mackechnie, J. R.  
*see* Heiyantuduwa, R., 1359  
*see* Wareham, D. G., 1294
- Mackie, K. R.  
Fourway: Graphical Tool for Performance-Based Earthquake Engineering, 1564
- Mackiewicz, P.  
*see* Kruszyna, M., 1757
- MacLean, Heather L.  
*see* Norman, Jonathan, 1772
- Madan, Alok  
General Approach for Training Back-Propagation Neural Networks in Vibration Control of Multidegree-of-Freedom Structures, 269
- Madanat, Samer  
Adaptive Optimization and Systematic Probing of Infrastructure System Maintenance Policies under Model Uncertainty, 1156
- Madden, Edward Tristram  
*see* Aydilek, Ahmet H., 869
- Madeja, R.  
*see* Moujaes, S., 428
- Madhavan, Narain  
*see* Rivero, Jesús A. Cacho, 670
- Madhyannapu, Raja S.  
*see* Puppala, Anand J., 808
- Madrigal, José Andrés  
*see* Boltz, Joshua P., 655
- Madsen, Ole Secher  
*see* Tajima, Yoshimitsu, 1896
- Maeno, Shiro  
*see* Bierawski, Lechoslaw G., 1892
- Magar, Victor S.  
*see* Lyons, Terrence, 639
- Maghrebi, Mahmoud F.  
New Method for Estimation of Discharge, 1035
- Mahale, David  
*see* Hollander, Yaron, 1778
- Mahboub, Kamyar C., P.E., ed.  
*see* Lee, K. Wayne, P.E., ed., 2050  
*see* Willett, David A., 1673
- Maheswari, J. Uma  
Application of Dependency Structure Matrix for Activity Sequencing in Concurrent Engineering Projects, 336
- Mahfood, Robert F., P.E.  
*see* Masters, Kathryn, P.E., 2028
- Mahin, Stephen A.  
*see* Rodgers, Janise E., 1447  
*see* Stojadinovic, Bozidar, 1446
- Mahmood, Talat, P.E.  
Activated Sludge Process Modification for Sludge Yield Reduction using Pulp and Paper Wastewater, 715
- Mahmoud, M.  
*see* Xu, P., 1941
- Maidment, David R.  
*see* Whiteaker, Timothy L., 1074
- Maji, Arup  
*see* Campbell, Douglas, 75
- Maji, Arup K., ed.  
*see* Malla, Ramesh B., ed., 2061
- Majone, Mauro  
*see* Louarn, Essyllt, 705
- Mak, Chin Long  
Algorithm Fusion for Detecting Incidents on Singapore's Central Expressway, 1696
- Mäkimattila, Simo  
*see* Perttula, Pia, 371

- Makinia, J.**  
Comparison of Two Model Concepts for Simulation of Nitrogen Removal at a Full-Scale Biological Nutrient Removal Pilot Plant, 636
- Makris, N.**  
*see* Sasani, M., 522
- Malachowski, Jerzy**  
*see* Kwasniewski, Leslaw, 1391
- Maleki, S.**  
Orthogonal Effects in Seismic Analysis of Skewed Bridges, 116
- Malerba, Pier Giorgio**  
*see* Biondini, Fabio, 1521
- Malhotra, Praveen K.**  
Return Period of Recorded Ground Motion, 1522
- Malinsky, Laurent**  
*see* Lecampion, Brice, 33
- Malite, Maximiliano**  
*see* Chodraui, Gustavo Monteiro de Barros, 1503
- Malla, Ramesh B., ed.**  
Earth & Space 2006: Engineering, Construction, and Operations in Challenging Environment, 2061
- Malwick, Erik J.**  
Shear Localization Due to Liquefaction-Induced Void Redistribution in a Layered Infinite Slope, 897  
*see* Kulasingam, R., 7
- Mamane, Hadas**  
Impact of Particulate Aggregated Microbes on UV Disinfection. I: Evaluation of Spore — Clay Aggregates and Suspended Spores, 666  
Impact of Particulate Aggregated Microbes on UV Disinfection. II: Proper Absorbance Measurement for UV Fluence, 667  
*see* Bohnerova, Zuzana, 760
- Mamedov, B. A.**  
Evaluation of Oxygen Sag Equation for Second-Order Biochemical Oxygen Demand Decay, 766
- Mammolo, Armando**  
Renovation of the 17th-Century Ponte Lungo Bridge in Chioggia, Italy, 105
- Manariotis, Ioannis D.**  
Anaerobic Filter Treatment of Municipal Wastewater: Biosolids Behavior, 585
- Mandal, Siddhwartha**  
Modeling of Prestressed Concrete-Filled Circular Composite Tubes Subjected to Bending and Axial Loads, 1483
- Mander, J. B.**  
*see* Xiao, Y., 119
- Mandolini, Alessandro**  
*see* de Sanctis, Luca, 927
- Manes, Costantino**  
Application of UVP within Porous Beds, 1028
- Manfredi, G.**  
*see* Prota, A., 210
- Manfredi, Gaetano**  
*see* Pecce, Marisa, 207
- Mang, Herbert A.**  
*see* Pichler, Bernhard, 913  
*see* Pichler, Christian, 1534
- Mannering, Fred**  
*see* Shahzadeh, Kevan, 1677
- Mannini, Claudio**  
*see* Morano, Salvatore Giacomo, 108
- Mannocchi, Francesco**  
Optimal Reservoir Operations for Irrigation using a Three Spatial Scales Approach, 1179
- Manoharan, N.**  
*see* Griffiths, D. V., 54
- Manoharan, P. Devadas**  
*see* Peter, J. Annie, 1305
- Manso, Pedro A.**  
Discussion of "Effect of Jet Air Content on Plunge Pool Scour", 3
- Manuel, Lance**  
*see* Chung, Hsin-Yang, 134
- Mao, Weihua**  
*see* Zhu, Yimin, 268
- Mao, Xian-Zhong**  
*see* Wei, Yong, 1866
- Maqsoud, A.**  
*see* Mbonimpa, M., 881
- Mara, D. Duncan**  
Aerated Rock Filters for Enhanced Ammonia and Fecal Coliform Removal from Facultative Pond Effluents, 646
- Maragnakis, E. Manos**  
*see* Saiddi, M. Saidi, 152
- Marasteau, Mihai O.**  
Rheological Characterization of Asphalt Emulsions Residues, 1304
- Marcari, G.**  
*see* Prota, A., 210
- Marchand, Kirk A., P.E.**  
*see* Ruth, Peter, 1401
- Marcus, Silvian, P.E.**  
*see* Sullivan, Bart, P.E., 2035
- Marey, Ken**  
*see* Lyons, Terrence, 639
- Marengo, H.**  
Case Study: Dam Safety during Construction, Lessons of the Overtopping Diversion Works at Aguamilpa Dam, 1045
- Marino, Gennaro G., P.E.**  
Protection Measures against Mine Subsidence Taken at a Building Site, 1278
- Mariño, Miguel A.**  
*see* Chu, Xuefeng, 606
- Marinucci, A.**  
*see* Bradshaw, A. S., 1895

## AUTHOR INDEX

Matthews

**Marion, Andrea**

Effects of Velocity Gradients and Secondary Flow on the Dispersion of Solutes in a Meandering Channel, 1061

**Marjanishvili, Shalva, P.E.**

Comparison of Various Procedures for Progressive Collapse Analysis, 1402

**Markus, Momcilo**

Predictability of Annual Sediment Loads based on Flood Events, 1108

**Marques, Guilherme F.**

Economically Driven Simulation of Regional Water Systems: Friant-Kern, California, 1849

**Marquette, Andre**

*see* Murphy, Paul, 688

**Marr, W. Allen**

On Globalization, 1908

**Marr, W. Allen, P.E.**

Using Our Best Judgment, 2030

**Marra, William A.**

Heat Flow through Soils and Effects on Thermal Storage Cycle in High-Mass Structures, 64

**Marsalek, Jiri**

*see* He, Cheng, 944

**Martin, Derrel L.**

*see* Irmak, Suat, 1228

**Martin, G. R.**

*see* Xiao, Y., 119

**Martin, Joseph P.**

*see* Korkut, Eyüp Nafiz, 614

**Martin-Benito, José María Tarjuelo**

*see* Romero, José Nicolás Ortiz, 1214

**Martinez, Jesús Montero**

*see* Romero, José Nicolás Ortiz, 1214

**Martínez, Roberto Simón**

*see* Romero, José Nicolás Ortiz, 1214

**Martino, J.**

*see* Guo, R., 778

**Martinuzzi, R.**

*see* Baddour, R. E., 967

**Martin-Vide, J. P.**

Disturbance Caused by Bed Sills on the Slopes of Steep Streams, 1052

**Marulanda, Camilo**

*see* Hashash, Youssef M. A., P.E., 872

**Marxhausen, Peter D., P.E.**

Buckling of Conventionally Sheathed Stud Walls, 1514

**Masad, Eyad**

*see* Dessouky, Samer, 451

*see* Krishnan, J. Murali, 15

*see* Masad, Sanaa, 1698

**Masad, Sanaa**

Analysis of Flexible Pavement Response and Performance using Isotropic and Anisotropic Material Properties, 1698

**Maschke, Ken**

Daniel W. Mead Prizes for Younger Members and Students: Ethically Understanding the Role of Computer Software in Engineering Calculation, 2002

**Mashahir, M. B.**

*see* Zarrati, A. R., 947

**Maslia, Morris L.**

*see* Guan, Jiabao, 1827

**Mason, John M., Jr.**

*see* Donnell, Eric T., 1691

**Mason, Quint**

*see* Rushing, John F., 1394

**Mass, Clifford**

*see* Maurer, Edwin P., 1093

**Masson, Jean-Paul**

*see* Attal, Mikael, 994

**Massoudieh, Arash**

*see* Huang, Xinjiang, 702

**Masters, Kathryn, P.E.**

Defeating Delays, 2028

**Masud, Arif**

*see* Xia, Kaiming, 460

**Matasovic, Neven**

Seismic Response of a Composite Landfill Cover, 819

*see* Zekkos, Dimitrios, 893

**Mathieu, E. E.**

*see* Singh, M. P., 1589

*see* Singh, M. P., 1590

**Mathew, Tom V.**

*see* Muralidhar, Bindhu, 1715

**Matott, L. Shawn**

*see* Bartelt-Hunt, Shannon L., 686

**Matsumoto, Mark R.**

*see* Yu, Xueyuan, 749

**Matsumoto, Takashi**

*see* Suthiwapirak, Peerapong, 1532

**Matt, Howard**

*see* Filiatrault, André, 1467

**Matta, Alain**

*see* Abuzzo, John, 1404

**Matta, Fabio**

Acoustic Emission Damage Assessment of Steel/CFRP Bonds for Rehabilitation, 214

**Mattei, Norma J.**

*see* Higgs, C. Fred, III, 1418

**Matteo, Michelle**

Watershed-Scale Impacts of Forest Buffers on Water Quality and Runoff in Urbanizing Environment, 1815

**Matthews, Benjamin**

Addressing Security in Early Stages of Project Life Cycle, 1259

**Matthews, H. Scott**

*see* Bilec, Melissa, 1158

- Matthys, S.  
Stress – Strain Behavior of Large-Scale Circular Columns Confined with FRP Composites, 1450
- Matzen, Vernon  
*see* Wirgau, Scott, 271
- Maurer, Edwin P.  
Using Radar Data to Partition Precipitation into Rain and Snow in a Hydrologic Model, 1093
- Maurin, Bernard  
*see* Zhang, Li, 1580
- Maurya, Nityanand Singh  
Applicability of Equilibrium Isotherm Models for the Biosorptive Uptakes in Comparison to Activated Carbon-Based Adsorption, 764
- May, Andrea L.  
*see* Banik, Gouranga C., P.E., 1914
- Maynard, Stephen T.  
Evaluation of the Micromodel: An Extremely Small-Scale Movable Bed Model, 965
- Mazumder, Anisur Rahman  
Performance of Overburnt Distorted Bricks as Aggregates in Pavement Works, 1352
- Mazzolani, Federico M.  
*see* Corte, Gaetano Della, 1337
- Mbonimpa, M.  
Predictive Model for the Water Retention Curve of Deformable Clayey Soils, 881
- McCabe, B. A.  
Behavior of Axially Loaded Pile Groups Driven in Clayey Silt, 814
- McCaffrey, Tim  
*see* Rushing, John F., 1394
- McCar, Bruce A.  
*see* Chen, Chi-Chung, 1836
- McCarty, Kevin  
Market Fresh, 2019
- McConahey, Erin, P.E.  
*see* Zekioğlu, Atilla, P.E., 2040
- McCord, Mark R.  
*see* Jiang, Zhuojun, 1719
- McCue, Terrence Michael, P.E.  
Contrasting the Benefits of Primary Clarification versus Prefermentation in Activated Sludge Biological Nutrient Removal Systems, 720
- McCuen, Richard H.  
Evaluation of the Nash—Sutcliffe Efficiency Index, 1132
- Fuzzy Analysis of Slope-Area Discharge Estimates, 1171  
*see* Schneider, Lauren E., 1101
- McDonald, Edward T.  
*see* Lakota, Gregory J., P.E., 2037
- McDonald, Eric V.  
*see* Albright, William H., 906
- McDonough, Kathleen M.  
Microcosm Approach to Study Transport of Polychlorinated Biphenyls in Sediment, 676
- McEnroe, Bruce M.  
*see* Young, C. Bryan, 1092
- McEwan, Ian  
*see* Manes, Costantino, 1028
- McGinn, A. J.  
*see* O'Rourke, T. D., 868
- McGuire, Markets  
Use of Satellite Data for Streamflow and Reservoir Storage Forecasts in the Snake River Basin, 1811
- McGuire, Travis M.  
*see* Newell, Charles J., P.E., 672
- McKay, Alan  
*see* Kish, Suzanne M., 739
- McKenna, Sean A.  
Impact of Sensor Detection Limits on Protecting Water Distribution Systems from Contamination Events, 1833  
*see* Khanal, Nabin, 1830
- McKinney, D. C.  
*see* Kracman, D. R., 1807
- McKinnie, Bryant  
*see* Yazdani, Nur, P.E., 1362
- McLaskey, Gregory  
Nondestructive Dynamic Evaluation of a Concrete Reaction Wall — Numerical and Experimental Studies, 1389
- McLean, Amanda  
Development of a University Laboratory Chemical Inventory and Exchange Program, 1945
- McLeod, Shaun M.  
Urban Runoff Quality Characterization and Load Estimation in Saskatoon, Canada, 750
- McMahon, T. A.  
*see* Srikanthan, R., 1094
- McMonigal, Dennis  
*see* Bank, Lawrence C., 208
- McNab, Walt W., Jr.  
*see* Newell, Charles J., P.E., 672
- McNeill, Laurie S.  
*see* Lai, Han, 694
- McShannon, J.  
Gaining Retention and Achievement for Students Program: A Faculty Development Program, 1424
- McVay, Michael  
*see* Hu, Zhihong, 820
- Meacham, Brian J., P.E.  
*see* Johann, Matthew A., 1369
- Mecchi, A. M.  
*see* Frigione, M., 1344
- Mecham, Gary D., P.E.  
*see* Dettmers, Dana L., 1952
- Medina, Josep  
*see* Yépez, Victor, 1694
- Medina, Martín  
*see* Pacheco, Sadott, 621

## AUTHOR INDEX

Meyer

**Medina, Victor F.**

*see Johnson, Billy E.*, 1960

**Medina, Victor F., P.E.**

Column Study Simulating In Situ Bioremediation of Perchlorate using Acetate as an Organic Substrate, 1950

**Meegoda, Jay N.**

*see Hu, L. M.*, 1943

**Meeroff, Daniel E.**

Iron-Mediated Aeration: Evaluation of Energy-Assisted Enhancement for In Situ Subsurface Remediation, 683

**Megally, Sami**

*see Bozorgzadeh, Azadeh*, 158

**Mehndiratta, H. C.**

*see Chandra, Satis*, 1670

**Mehrabi, Armin B., P.E.**

In-Service Evaluation of Cable-Stayed Bridges, Overview of Available Methods, and Findings, 175

**Mehrotra, Indu**

*see Gali, Veeresh S.*, 759

*see Prashanth, S.*, 637

**Mehta, Kishor C., P.E.**

*see Phelan, R. Scott, P.E.*, 133

**Mei, Renwei**

*see Singh, Rajkeshar*, 84

**Meier, Roger, ed.**

*see Huang, Baoshan, ed.*, 2079

**Meijers, P.**

*see de Groot, M. B.*, 1877

*see de Groot, M. B.*, 1885

*see Kudella, M.*, 1884

**Melchers, Robert E.**

Recent Progress in the Modeling of Corrosion of Structural Steel Immersed in Seawaters, 1152

**Melhem, Hani**

*see Abudayyeh, Osama, P.E.*, 246

**Melo, André L. O.**

Strategic Decision Analysis for Selection of Landfill Sites, 1652

**Melo, J. F.**

Forces on Plunge Pool Slabs: Influence of Joints Location and Width, 936

**Melville, Bruce**

Countermeasure Toe Protection at Spill-Through Abutments, 956

Flow-Induced Failure of Cable-Tied Blocks, 964

Scour Countermeasures for Wing-Wall Abutments, 988

**Melysund, Vivian**

Increased Snow Loads and Wind Actions on Existing Buildings: Reliability of the Norwegian Building Stock, 1618

**Memari, Ali M.**

*see Getz, Daniel R.*, 86

**Menches, Cindy L., P.E.**

Conceptual Planning Process for Electrical Construction, 417

Quantitative Measurement of Successful Performance from the Project Manager's Perspective, 415

**Mendonça, A. A.**

Stabilization of Arsenic-Bearing Sludges using Lime, 1276

**Mendonça, David**

Impacts of the 2001 World Trade Center Attack on New York City Critical Infrastructures, 1163

**Mendoza, Michael**

*see Minchin, R. Edward, Jr.*, 1258

**Meng, Jian**

*see Cao, Zhixian*, 1041

*see Cao, Zhixian*, 1059

**Menon, Devdas**

*see Srinivas, S.*, 1767

**Menzemer, Craig C.**

*see Azzam, Diya*, 1597

*see Azzam, Diya*, 1628

**Mercier, Guy**

*see Levasseur, Béatrice*, 654

*see Meunier, Nathalie*, 660

**Merry, Scott M.**

Effect of Gas on Pore Pressures in Wet Landfills, 829

**Mertz, Dennis**

*see Patrick, Michael D.*, 117

**Meselhe, Ehab A.**

*see Habib, Emad H.*, 979

**Meskouris, Konstantin**

*see Holler, Stefan*, 1594

**Messac, Achille**

*see Khire, Ritesh A.*, 1603

**Messer, Carroll J.**

*see Lee, Sangsoo*, 1750

**Messier, Danielle**

*see Morse, Brian*, 184

*see Morse, Brian*, 185

**Messner, John I.**

*see El Wardani, Marwa A.*, 311

**Meunier, N.**

*see Brar, Satinder K.*, 1946

**Meunier, Nathalie**

Heavy Metals Removal from Acidic and Saline Soil Leachate using Either Electrochemical Coagulation or Chemical Precipitation, 660

**Meyer, Michael D.**

*see Amekudzi, Adjo*, 1776

*see Amekudzi, Adjo*, 1777

**Meyer, Steffen**

*see Singh, Vijay P.*, 1175

**Meyer, Susan**

*see Singh, Vijay P.*, 1175

- Meylan, Michael H.  
*see* Grotmaack, Rike, 1874
- Mi, Hongyong  
Racking Performance of Tall Unblocked Shear Walls, 1452
- Michaels, Paul, P.E.  
Relating Damping to Soil Permeability, 28
- Michallet, H.  
*see* Foray, P., 1882
- Michaud, David  
Methodology for Ranking the Elements of Water-Supply Networks, 1160
- Michell, Frank  
Case Study: Sediment Control at Water Intake for Large Thermal-Power Station on a Small River, 975
- Michelsen, Ari M.  
*see* Ward, Frank A., 1851
- Mifflin, Edward  
*see* Scawthorn, Charles, 1928  
*see* Scawthorn, Charles, 1929
- Mihail, Darrell J.  
Bioremediation of Petroleum-Contaminated Soil using Composting, 1951
- Mikoš, Matjaž  
*see* Četina, Matjaž, 943
- Milani, Gabriele  
Homogenization Approach for the Limit Analysis of Out-of-Plane Loaded Masonry Walls, 1602
- Milcent, Frédéric  
*see* Descantes, Yannick, 1331
- Miller, Christopher M., P.E.  
*see* Hassan, Kazi Z. A., 767
- Miller, Gerald A., ed.  
Unsaturated Soils 2006, 2096
- Miller, Jennifer H.  
Nitrogen Transformations during Soil-Aquifer Treatment of Wastewater Effluent — Oxygen Effects in Field Studies, 732
- Miller, Jennifer H.  
*see* Yoo, H. Harold, 674
- Miller, John S.  
*see* Garber, Nicholas J., 1665  
*see* Kamprath, Michael T., 1420
- Miller, John S., P.E.  
Borrowing Residential Trip Generation Rates, 1674
- Miller, Lindon  
*see* Beltaos, Spyros, 1056
- Miller, R.  
*see* Salem, O., 1980
- Miller, Thomas H.  
*see* Chansawat, Kasidit, 106
- Miller, William, Jr.  
*see* Sheppard, D. Max, 995
- Milligan, Jarrod H.  
Short- and Long-Term Effects of Element Costs and Failure Costs in *Pontis*, 166
- Mills, Julie E.  
*see* Pham, Maria M., 1502
- Minchin, R. Edward, Jr.  
Best Practices of Bridge System Management—A Synthesis, 1258
- Case for Drug Testing of Construction Workers, 1242  
*see* El-Mashaleh, Mohammad, 338
- Minkarah, I.  
*see* Salem, O., 1256
- Minor, Hans-Erwin  
*see* Kramer, Kristian, 1023  
*see* Pagliara, Stefano, 976  
*see* Pfister, Michael, 1014  
*see* Zwiefel, Andreas, 1888
- Minor, Joseph E., P.E.  
Design of Window Glass for Lateral Pressures, 95
- Minsker, Barbara S.  
*see* Babbar, Meghna, 1837  
*see* Dawsey, Wesley J., 1825  
*see* Espinoza, Felipe P., 278
- Miranda, E.  
Generalized Interstory Drift Spectrum, 1523
- Miranda, Eduardo  
Approximate Floor Acceleration Demands in Multistory Buildings. I: Formulation, 6
- Mirmiran, Amir  
*see* Zhu, Zhenyu, 139  
*see* Zhu, Zhenyu, 224
- Mirza, S. Ali  
*see* Tikka, Timo K., 1477  
*see* Tikka, Timo K., 1596
- Mishra, G. C.  
*see* Singh, A. K., 34
- Mishra, Govinda C.  
Earth Dam with Toe Drain on an Impervious Base, 50
- Mishra, P. K.  
Effectiveness of Bermuda Grass as Vegetative Cover in Grassed Waterway: A Simulated Study, 1196
- Mishra, S. K.  
*see* Jain, M. K., 1136
- Misra, D.  
*see* Sekhar, M., 1104
- Misra, K.  
*see* Brar, Satinder K., 1946
- Mitchell, Denis  
*see* Tremblay, Robert, 1375
- Mitchell, James K.  
*see* Liu, Ning, 878
- Mitri, Hani  
*see* Saad, Bassam, 1705
- Mittal, Atul Kumar  
*see* Maurya, Nityanand Singh, 764

## AUTHOR INDEX

Morel

### Mizumura, Kazumasa

Analyses of Drought Flow in Recession Period, 1085  
Analytical Solutions of Nonlinear Kinematic Wave Model, 1126

### Mizushima, Mitsuhiro

see Mizumura, Kazumasa, 1085

### Mo, Y. L.

Torsional Design of Hybrid Concrete Box Girders, 136

### Mobasher, B.

see Sharda, J., 62

### Modares, Mehdi

Natural Frequencies of a Structure with Bounded Uncertainty, 578

### Moelders, Nicholas

see Roy, Amitava, 1348

### Mofidi, Alexander A.

see Jin, Shanshan, 693

### Moghaddam, H.

More Efficient Seismic Loading for Multidegrees of Freedom Structures, 1604

### Mohamed, O.

see Abdul-Rahman, H., 300

### Mohamed, Osama A., P.E.

Progressive Collapse of Structures: Annotated Bibliography and Comparison of Codes and Standards, 1407

### Mohamed, Yasser

see Agbulos, Albert, 317

see Chung, Tae Hwan, 376

### Mohammadi, Jamshid

see Khudeira, Soliman, 1979

### Mohammadi, R. Karimi

see Moghaddam, H., 1604

### Mohan, Prasanna K.

Biodegradability of Surfactants under Aerobic, Anoxic, and Anaerobic Conditions, 613

### Mohanty, Samrat

Postconstruction Environmental Monitoring of a Fly Ash-Based Road Subbase, 1993

Structural Performance Monitoring of an Unstabilized Fly Ash-Based Road Subbase, 1769

### Mohapatra, P. K.

Detection of Partial Blockage in Single Pipelines, 952

### Mohri, Yoshiyuki

see Kawabata, Toshinori, 903

### Mok, Fung Man

see Yiu, Tak Wing, 389

### Mokhtar, Ahmed

Educational Architecture-Oriented Software Linking Conceptual Design and Solar Intensity, 93

### Mola, Franco

see Giussani, Francesca, 1629

### Molenaar, Keith R.

see Shane, Jennifer S., 1906

### Molennar, Keith R., P.E.

see Gransberg, Douglas D., P.E., 2081

### Molin, Staffan

see Holmgren, Åke J., 1161

### Molina, J.

see Jäcome, A., 727

### Möller, Gregory

see Newcombe, Remembrance L., 583

### Moloo, J.

see Mohapatra, P. K., 952

### Momber, A. W.

see Hu, X. G., 1065

### Monkman, Sean

Assessing the Carbonation Behavior of Cementitious Materials, 1351

### Montalto, Franco A.

see Collick, Amy S., 731

### Montanari, Alberto

see Brandimarte, Luigia, 980

### Montané, Camille

see Meunier, Nathalie, 660

### Montes, Felipe

see Valavala, Srinivas, 1098

### Montoya, Esneyder

Compression Field Modeling of Confined Concrete: Constitutive Models, 1318

### Moon, Franklin L.

Recommendations for Seismic Evaluation and Retrofit of Low-Rise URM Structures, 1506

see Yi, Tianyi, 1504

see Yi, Tianyi, 1505

### Moon, Hee Sun

Initial Alkalinity Requirement and Effect of Alkalinity Sources in Sulfur-Based Autotrophic Denitrification Barrier System, 709

### Moore, Ian D.

see Dhar, Ashutosh S., 1762

see Kennedy, Matthew J., 48

### Moore, J. R.

see Beavers, J. E., P.E., 377

### Moore, Stephen E.

see Hedrick, Kevin P., 1129

### Mora, Rodrigo

Computer Representation to Support Conceptual Structural Design within a Building Architectural Context, 253

### Moran, Kathryn

see Wang, Jian-Hua, 924

### Morano, Salvatore Giacomo

Preflex Beams: A Method of Calculation of Creep and Shrinkage Effects, 108

### Morocus, G.

Performance Prediction of Bridge Deck Systems using Markov Chains, 1378

### Morel, R.

see Proust, S., 1026

- Morency, Maxim**  
Lightweight Shotcrete Canoe: Use of Viscosity Modifying Admixture and Acetone as Artificial Paste, 1300
- Moreschi, L. M.**  
*see* Singh, M. P., 1589  
*see* Singh, M. P., 1590
- Morgan, Dudley R., ed.**  
Shotcrete for Underground Support X, 2086
- Morgan, K.**  
*see* Gil, A. J., 82
- Morgan, R.**  
*see* Bradshaw, A. S., 1895
- Moriconi, Giacomo**  
*see* Corinaldesi, Valeria, 1336
- Morley, Matthew**  
*see* Adam, Michael, 763
- Morley, Matthew C., P.E.**  
*see* Young, Travis S. M., 1949
- Morrish, Dave**  
*see* Kijewski-Correa, Tracy, 1588
- Morrow, Agnes**  
*see* Medina, Victor F., P.E., 1950
- Morse, Brian**  
Growth and Decay of Estuary Ice Cover, 184  
Hydrodynamics of Mesotidal Estuary in Winter, 185
- Morse, Timothy M.**  
*see* Thuman, Andrew J., P.E., 719
- Morton, David P.**  
*see* Srour, Issam M., 402
- Mory, M.**  
*see* Foray, P., 1882
- Moselhi, O., P.E.**  
*see* Li, J., 406
- Moselhi, Osama**  
*see* Sadeghpour, Farnaz, 302
- Moser, David A.**  
*see* Watkins, David W., Jr., 1852
- Moses, Jonathan P.**  
Evaluation of Effective Width and Distribution Factors for GFRP Bridge Decks Supported on Steel Girders, 143
- Mosqueda, Gilberto**  
*see* Stojadinovic, Bozidar, 1446
- Moss, R. E. S.**  
CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, 873  
Normalizing the CPT for Overburden Stress, 812
- Moss, Robert E. S.**  
*see* Cetin, K. Onder, 10
- Mostafa, Anirban**  
Relationship between Housing Affordability and Economic Development in Mainland China — Case of Shanghai, 1779
- Mota, Carlos**  
Critical Review of Deflection Formulas for FRP-RC Members, 206
- Motro, René**  
*see* Zhang, Li, 1580
- Mottaghi, Alireza**  
*see* Samani, Hossein M. V., 981
- Mottram, J. T.**  
*see* Evernden, M. C., 1342
- Mouhoubi, Saida**  
*see* Chazallon, C., 40
- Moujaes, S.**  
Effect of Envelope on Residential Cooling Load Coupled with Use of Solar/Photovoltaic Panels, 428
- Moujaes, S. F.**  
Three-Dimensional CFD Predictions and Experimental Comparison of Pressure Drop of Some Common Pipe Fittings in Turbulent Flow, 426
- Moussa, Mohamed**  
Decision Tree Modeling Using Integrated Multilevel Stochastic Networks, 412
- Moyano, David C., P.E.**  
Past Perfect, 1996
- Msaad, Y.**  
Analyses of Heated Concrete Spalling due to Restrained Thermal Dilation: Application to the "Chunnel" Fire, 552
- Mu, Bin**  
FEA of Complex Bridge System with FRP Composite Deck, 196
- Mu, Edward B.**  
*see* Kuder, Katherine G., 1309
- Muchemedzi, Reuben**  
*see* Atalah, Alan, P.E., 1434
- Muchuruza, Victor**  
*see* Mussa, Renatus, P.E., 1740
- Muhanna, Rafi L.**  
*see* Modares, Mehdi, 578
- Mukherjee, Amlan**  
*see* Rojas, Eddy M., 261
- Mukhopadhyaya, Phalguni**  
Application of Hygrothermal Modeling Tool to Assess Moisture Response of Exterior Walls, 101
- Mukunoki, Toshifumi**  
*see* Rowe, R. Kerry, 920
- Muliana, Anastasia H.**  
*see* Haj-Ali, Rami, 577
- Mullen, Robert L.**  
*see* Modares, Mehdi, 578
- Mullens, Michael A., P.E.**  
Structural Insulated Panels: Impact on the Residential Construction Process, 366
- Mullins, Gray**  
Predicting End Bearing Capacity of Post-Grouted Drilled Shaft in Cohesionless Soils, 822

## AUTHOR INDEX

Nanda

- Mullur, Anoop A.  
*see* Khire, Ritesh A., 1603
- Multon, Stéphane  
Chemomechanical Assessment of Beams Damaged by Alkali-Silica Reaction, 1317
- Muralidhar, Bindhu  
Prototype Time-Space Diary Design and Administration for a Developing Country, 1715
- Muralikrishna, G.  
*see* Baidya, D. K., 789
- Murnane, Richard J.  
Catastrophe Risk Models for Wildfires in the Wildland-Urban Interface: What Insurers Need, 1938
- Murphy, James  
*see* Scawthorn, Charles, 1928  
*see* Scawthorn, Charles, 1929
- Murphy, Joseph F., P.E.  
*see* Green, David W., 1261
- Murphy, Paul  
Predicting the Performance of Activated Carbon-, Coke-, and Soil-Amended Thin Layer Sediment Caps, 688
- Murray, Regan  
Model for Estimating Acute Health Impacts from Consumption of Contaminated Drinking Water, 1831  
*see* Janke, Robert, 1834
- Murray, Thomas M.  
*see* Setareh, Mehdi, 1371
- Murthy, B. R. Srinivasa  
*see* Babu, G. L. Sivakumar, 1754
- Musleh, F. A.  
Functional Relationships of Resistance in Wide Flood Plains with Rigid Unsubmerged Vegetation, 948
- Mussa, Renatus  
Probabilistic Neural Networks Application for Vehicle Classification, 1693
- Mussa, Renatus, P.E.  
Safety Analysis of Florida Rural Interstate Freeway Travel in Relation to the 65 km/h (40 mi/hr) Minimum Speed Regulation, 1740
- Muste, Marian  
*see* Eitema, Robert, 934  
*see* Michell, Frank, 975
- Mutilil, N.  
*see* Jayawardena, A. W., 1070
- Myerchin, Greta  
Disinfection By-Product Formation during Long-Term Water Storage in Alaska, 188
- Myers, John J.  
*see* Ekenel, Mahmut, 232
- Myers, Tommy  
*see* Lyons, Terrence, 639
- Myint, M.  
*see* Gadhamshetty, V., 429
- Mysore, Deepa  
Vermiculite Filtration for Removal of Oil from Water, 1957
- Na, Lim Jay  
Stimulating Construction Innovation in Singapore through the National System of Innovation, 394
- Naess, A.  
*see* Dimentberg, M., 568
- Naidu, A. S. K.  
Bayesian Network for E/M Impedance-Based Damage Identification, 267
- Naik, Tarun R.  
High-Carbon Fly Ash in Manufacturing Conductive CLSM and Concrete, 1347
- Nair, R. Shankar, P.E.  
Preventing Disproportionate Collapse, 1396
- Naito, C. J.  
Blast Assessment of Load-Bearing Reinforced Concrete Shear Walls, 1982
- Najarian, Tavit O.  
*see* Litwack, Howard S., 642
- Najera, B.  
*see* Barr, P. J., 1365
- Nakai, Teruo, ed.  
*see* Lade, Pouli V., ed., 2069
- Nakamura, Tsuneyoshi  
*see* Ito, Hitoshi, 1581
- Nakashima, Masayoshi  
*see* Inoue, Kazuo, 1525  
*see* Okazaki, Taichiro, 1557  
*see* Okazaki, Taichiro, 1570
- Nakata, Kisaburo  
*see* Azam, Mir Hammadul, 1902
- Nakayama, Wataru  
*see* Shimizu, Yoshihisa, 801
- Nakaza, Eizo  
Cross-Shore Internal Waves in Zanpa Coastal Region of Okinawa Island, 1858
- Nakhla, G.  
*see* Acharya, C., 691
- Nakhla, George  
*see* Mohan, Prasanna K., 613
- Nam, Kyoungphile  
*see* Moon, Hee Sun, 709
- Namekar, Shailesh  
Application of Artificial Neural Network Model in Estimation of Wave Spectra, 1894
- Namiki, Hironori  
*see* Sakano, Masahiro, 171
- Nanakorn, Pruettha  
*see* Neaupane, Krishna Murari, 826
- Nanbakshi, Hassan  
*see* Zheng, Jinghui, 1775
- Nanda, G.  
*see* Jha, Madan K., 1135

**Nandagiri****2006 ASCE TRANSACTIONS****Nandagiri, Lakshman**

Performance Evaluation of Reference Evapotranspiration Equations across a Range of Indian Climates, 1190

**Nanni, Antonio**

*see* Ekenel, Mahmut, 232

**Narla, Omprasad**

*see* Khodadoust, Amid P., 718

**Nash, Phillip T., P.E.**

*see* Bai, Yong, P.E., 130

*see* Bai, Yong, P.E., 321

**Nassar, Khaled**

Reclaimed Asphalt Pavement Detection and Quantity Determination, 1988

**Nassar, Khaled M.**

Developing a Complexity Measure for Project Schedules, 343

**Nassar, Walid**

*see* Nassar, Khaled, 1988

**Natarajan, R.**

*see* Kannan, T. Rajesh, 1861

**Natrajan, Priya**

*see* Huang, Frank Y. C., P.E., 771

**Naunovic, Zorana**

*see* Blatchley, Ernest R., III, 742

**Navon, R.**

Model for Automated Monitoring of Fall Hazards in Building Construction, 360

*see* Sacks, R., 256

**Nayal, Rim**

Tension Stiffening Model for Concrete Beams Reinforced with Steel and FRP Bars, 1363

**Nayefeh, A. H.**

*see* Baccouch, M., 72

**Nazarian, Soheil**

Impact of Temperature Gradient on Modulus of Asphaltic Concrete Layers, 1316

*see* Chen, Dar-Hao, 1140

*see* Tandon, Vivek, 1314

**Nazariha, M.**

*see* Zarrati, A. R., 947

**Neupane, Krishna Murari**

Coupled Heat-Deformation-Flow Analysis for Clayey Soil, 826

**Nedović-Budić, Zorica**

CommunityViz-Based Prototype Model for Assessing Development Impacts in a Naturalized Floodplain — EmiquonViz, 1795

**Neelkanth, J. K.**

*see* Mishra, P. K., 1196

**Neff, Daniel H., P.E.**

*see* U, José Terán, 1994

**Negami, Takehito**

*see* Hong, Zhenshu, 806

**Nehate, Girish**

3D Calculation of Stopping-Sight Distance from GPS Data, 1739

**Nelson, Bruce**

*see* Bank, Lawrence C., 208

**Nelson, John D., P.E.**

*see* Chao, Kuo-Chieh, P.E., 1658

*see* Perko, Howard A., P.E., 73

**Nelson, Lee O.**

*see* Dettmers, Dana L., 1952

**Nelson, Priscilla P.**

*see* Hsu, Sung-Chi, 796

**Nemes, Rita**

Strength of Lightweight Glass Aggregate Concrete, 1343

**Neocleous, K.**

Design Issues for Concrete Reinforced with Steel Fibers, Including Fibers Recovered from used Tires, 1339

**Nepal, Madhav Prasad**

Effects of Schedule Pressure on Construction Performance, 306

**Netherton, Michael D.**

*see* Stewart, Mark G., 1933

**Neto, Jorge Munaiar**

*see* Chodraui, Gustavo Monteiro de Barros, 1503

**Neuenhofer, A., P.E.**

Lateral Stiffness of Shear Walls with Openings, 1621

**Neves, Luís A. C.**

Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Single Maintenance Type, 1537

Probabilistic Lifetime-Oriented Multiobjective Optimization of Bridge Maintenance: Combination of Maintenance Types, 1619

**Neveling, D.**

Examination of Level of Analysis Accuracy for Curved I-Girder Bridges through Comparisons to Field Data, 120

**Newcombe, Remembrance L.**

Arsenic Removal from Water by Moving Bed Active Filtration, 583

**Newell, Charles J., P.E.**

Multyear Temporal Changes in Chlorinated Solvent Concentrations at 23 Monitored Natural Attenuation Sites, 672

**Newman, J. A., P.E.**

*see* Parker, D. S., P.E., 684

**Newson, Tim**

Effect of Structure on the Geotechnical Properties of Bauxite Residue, 792

**Newton, Linda A.**

Impact of Quality on Building Costs, 1157

**Newton, Craig M.**

Fundamental Frequency Testing of Reinforced Concrete Beams, 1384

## AUTHOR INDEX

Novokshchenov

- Nezu, Ichisa**  
Numerical Calculation of Turbulence Structure in Depth-Varying Unsteady Open-Channel Flows, 999
- Ng, C. W. W.**  
*see* Zhang, L. M., 854
- Ng, H. S.**  
Knowledge Discovery in a Facility Condition Assessment Database using Text Clustering, 1142
- Ng, Mandy Y. M.**  
*see* Leung, Christopher K. Y., 201
- Ng, Simon, P.E.**  
*see* Attanayake, Upul, 156
- Ng, Tang-Tat**  
Input Parameters of Discrete Element Methods, 506
- Ng, Tiang Lian**  
*see* Ling, Florence Yean Yng, 1412
- Ng, Wing-Cheong**  
Evaluating the Impact of Vessel-Traffic Interference on Container Terminal Capacity, 1862
- Ngeh, Lawrence N.**  
*see* Dao, Hien V., 661
- Nguyen, Dan K.**  
2D Shallow-Water Model using Unstructured Finite-Volumes Methods, 958
- Nguyen, Ngoc T. B.**  
Strength and Behavior of Cold-Formed Steel Z-Sections Subjected to Major Axis Bending, 1600
- Nguyen, The Hung**  
*see* Nguyen, Dan K., 958
- Ni, Chun**  
*see* Mi, Hongyong, 1452  
*see* Varoglu, Erol, 1578
- Nicholas, Brian S.**  
*see* Higgins, Christopher, P.E., 173
- Nichols, Andrew P.**  
Automatic Speed Calibration Methodology for Traffic Monitoring Sites, 1666
- Nickerson, Robert E., P.E., ed.**  
Electrical Transmission Line and Substation Structures: Structural Reliability in a Changing World, 2062
- Niehaus, Randall S., P.E.**  
*see* Hahn, Daniel E., P.E., 2024
- Nielsen, Kris R.**  
Risk Management: Lessons from Six Continents, 1244
- Nielsen, Richard J.**  
*see* Milligan, Jarrod H., 166
- Niemeier, D. A.**  
*see* Eisinger, D. S., 1756
- Niemeier, Debbie A.**  
*see* Hendren, Patricia, 1159
- Niewiarowski, Rich**  
*see* Lizundia, Bret, 2029
- Nikolov, Alex**  
*see* Vijayaraghavan, Krishna, 680
- Nikora, V.**  
*see* Aberle, J., 990
- Nikora, Vladimir**  
*see* Manes, Costantino, 1028
- Nirmalakhandan, N.**  
*see* Gadhamshetty, V., 429  
*see* McShannon, J., 1424
- Nishat, Ainun**  
*see* Islam, G. M. Tarekul, 1043
- Nititharmyong, Pollaphat**  
Success/Failure Factors and Performance Measures of Web-Based Construction Project Management Systems: Professionals' Viewpoint, 295
- Niu, Hedong**  
Effects of FRP-Concrete Interface Bond Properties on the Performance of RC Beams Strengthened in Flexure with Externally Bonded FRP Sheets, 1345
- Niwawate, Chudate**  
*see* Ogunkana, Stephen, 1247
- Nixon, W.**  
Range of Validity of the Transient Damping Leakage Detection Method, 1025
- Nkurunziza, Gilbert**  
*see* Debaiky, Ahmed S., 226
- Noble, Rachel T.**  
*see* Fries, J. Stephen, 736
- Noble, Richard M., P.E.**  
Streaming Solutions, 1997
- Nogami, T.**  
*see* Chowdhury, B., 856
- Noguera, Daniel R.**  
*see* Goel, Ramesh K., 735
- Noldred, O.**  
*see* Thomas, W. H., 1487
- Nordin, Håkan**  
Concrete Beams Strengthened with Prestressed Near Surface Mounted CFRP, 194
- Norman, Jonathan**  
Comparing High and Low Residential Density: Life-Cycle Analysis of Energy Use and Greenhouse Gas Emissions, 1772
- North, Steve**  
*see* Winch, Graham M., 335
- Norville, H. Scott, P.E.**  
Blast-Resistant Glazing Design, 97  
*see* Minor, Joseph E., P.E., 95
- Noumowé, A.**  
High-Strength Self-Compacting Concrete Exposed to Fire Test, 1349
- Nova, Roberto**  
*see* Arroyo, Marcos, 1290
- Nova-Roessig, Lili, P.E.**  
Centrifuge Model Studies of the Seismic Response of Reinforced Soil Slopes, 813
- Novokshchenov, Vladimir, P.E.**  
A Cautionary Tale, 1995

- Nozick, Linda K.  
*see* Davidson, Rachel A., 425
- Nuntasunti, Suchart  
Experimental Assessment of Wireless Construction Technologies, 388
- Nussbaum, Miguel  
*see* Aldunate, Roberto, 247
- Nüsslein, Klaus  
*see* DeJong, Jason T., 905
- Nuttayasakul, Nuthaporn  
Behavior of Complex Hat Shapes used as Truss Chord Members, 1501
- Nwaiwu, Charles M. O.  
*see* Osinubi, Kolawole J., 798  
*see* Osinubi, Kolawole J., 1287
- Oad, Ramchand  
Managing Irrigation for Better River Ecosystems — A Case Study of the Middle Rio Grande, 1229
- O'Bannon, Deborah J., P.E.  
Creating a New School of Computer Science and Engineering in Kansas City, 1912
- Obata, Makoto  
*see* Goto, Yoshiaki, 1599
- Obenour, Dan  
*see* Whiteaker, Timothy L., 1074
- O'Brien, Eugene J.  
*see* Brady, Sean P., 128  
*see* Brady, Sean P., 129
- O'Brien, William J.  
*see* El-Mashaleh, Mohammad, 338
- Ochoa, Sergio F.  
*see* Aldunate, Roberto, 247
- O'Connell, Neil  
*see* Consoli, Simona, 1164  
*see* Consoli, Simona, 1165
- O'Connor, James T.  
Crew Production Rates for Contract Time Estimation: Beam Erection, Deck, and Rail of Highway Bridges, 328  
*see* Cha, Hee Sung, 1253
- Odai, Samuel Nii  
Analytical Solution of the Burgers Equation for Simulating Transitory Waves in Conveyance Channels, 951
- Odeyinka, Henry Agboola  
*see* Aibinu, Ajibade Ayodeji, 354
- O'Donnell, Brian, P.E.  
Completing the Circle, 2023
- Oehlers, D. J.  
*see* Liu, I. S. T., 199  
*see* Liu, I. S. T., 200
- Ofori, George  
*see* Na, Lim Jay, 394
- Ogunlana, Stephen  
Effect of Humor Usage by Engineers at Construction Sites, 1247
- Oguz, Seyfullah H.  
*see* Aydilek, Ahmet H., 2
- Oh, Byung Hwan  
Theoretical Analysis of Transfer Lengths in Pretensioned Prestressed Concrete Members, 545
- Oh, Jeong-Ho  
Modeling of Pavement Response using Nonlinear Cross-Anisotropy Approach, 1711
- Oh, Jutaek  
*see* Kim, Do-Gyeong, 1692
- Ohara, N.  
*see* Kavvas, M. L., 1099
- Ohashi, Akiyoshi  
*see* Tandukar, Madan, 601
- Ohlsen, Michael  
*see* McLean, Amanda, 1945
- Ojha, C. S. P.  
*see* Singh, A. K., 34
- Okamura, M.  
*see* Ioualalen, M., 1870
- Okamura, Mitsu  
Degree of Saturation and Liquefaction Resistances of Sand Improved with Sand Compaction Pile, 803
- Okazaki, Taichiro  
Experimental Performance of Link-to-Column Connections in Eccentrically Braced Frames, 1557
- Stability Requirements for Beams in Seismic Steel Moment Frames, 1570
- Oktay, Seda  
*see* Cokgor, Emine Ubay, 590
- Okui, Y.  
*see* Amin, A. F. M. S., 440
- Olek, Jan  
*see* Yang, Zhifu, 1307
- Oleszkiewicz, J. A.  
*see* Sears, K., 724
- Oliva, Michael G.  
*see* Bank, Lawrence C., 208
- Olmo, Iñaki Fernández  
*see* López, Isabel, 706
- Olsen, Kimball G.  
*see* Rollins, Kyle M., 894  
*see* Rollins, Kyle M., 895
- Olsen, R. S.  
*see* Moss, R. E. S., 812
- Olsen, Ryan J.  
*see* Rollins, Kyle M., 894  
*see* Rollins, Kyle M., 895
- Onar, Arzu  
Statistical Mixed Effects Models for Evaluation and Prediction of Accelerated Pavement Testing Results, 1748
- Önder, Halil  
*see* Korkmaz, Serdar, 1192

## AUTHOR INDEX

Ozcebe

- O'Neill, John C.  
*see* Booker, James F., 1854
- Ong, D. E. L.  
Pile Behavior due to Excavation-Induced Soil Movement in Clay. I: Stable Wall, 780  
*see* Leung, C. F., 781
- Ong, G. P.  
Transverse Pavement Grooving against Hydroplaning. I: Simulation Model, 1709  
*see* Fwa, T. F., 1710
- Ong, Seehong  
*see* Yi, Xianjie, 38
- Onizuka, Kotaro  
*see* Odai, Samuel Nii, 951
- Ostrom, M.  
*see* Thornton, E. C., 769
- Oparadu, Edmund E.  
*see* Udoeyo, Felix F., 1330
- Oppenheim, P., P.E.  
*see* Grosskopf, K. R., 419
- Or, Dani  
*see* Berli, Markus, 22
- Orbell, John D.  
*see* Dao, Hien V., 661
- Ordóñez, Javier F.  
*see* Gabriel, Steven A., 1148
- Orhon, Derin  
*see* Cokgor, Emin Ubay, 590
- Orosz, Matthew P.  
*see* Horman, Michael J., 324
- O'Rourke, T. D.  
Lessons Learned for Ground Movements and Soil Stabilization from the Boston Central Artery, 868
- O'Rourke, Thomas D.  
*see* Davidson, Rachel A., 425  
*see* Tutuncu, Ilker, 1560
- Ortega-Guerrero, Marcos Adrián  
*see* Loáiciga, Hugo A., 1116
- Ortiz-García, José J.  
Derivation of Transition Probability Matrices for Pavement Deterioration Modeling, 1678
- Osato, Koji  
*see* Odai, Samuel Nii, 951
- Osborn, Andrew E. N., P.E.  
*see* Loizeaux, Mark, 1405
- Osinubi, Kolawole J.  
Compaction Delay Effects on Properties of Lime-Treated Soil, 1287
- Design of Compacted Lateritic Soil Liners and Covers, 798
- Osinubi, Kolawole Juwunio  
Influence of Compactive Efforts on Lime-Slag Treated Tropical Black Clay, 1280
- Osman, Ashraf S.  
Ground Movement Predictions for Braced Excavations in Undrained Clay, 821
- Osorio, D.  
*see* Damgaard, J. S., 1883
- Ostendorf, David W.  
Calibrated Models of Deicing Agent Solids, Pavement Texture, and Specific Conductivity of Highway Runoff, 761
- Osteraas, John D.  
Murrah Building Bombing Revisited: A Qualitative Assessment of Blast Damage and Collapse Patterns, 1399
- Ostfeld, Avi  
*see* Grayman, Walter M., 1832  
*see* Preis, Ami, 1828
- Othman, M.  
*see* Abdul-Rahman, H., 300
- Othman, M. Y.  
Double-Pass Photovoltaic-Thermal Solar Air Collector with Compound Parabolic Concentrator and Fins, 433
- Double-Pass Photovoltaic-Thermal Solar Collector, 434
- Otter, Duane E.  
*see* Foutch, Douglas A., 165
- Ottsen, Christopher E., P.E.  
*see* Bruen, Michael P., 2004
- Oumeraci, H.  
*see* de Groot, M. B., 1885  
*see* Kudella, M., 1884
- Overcamp, Thomas J.  
Type II Settling Data Analysis, 598
- Overton, Daniel D., P.E.  
*see* Chao, Kuo-Chieh, P.E., 1658
- Oweis, Issa S.  
Estimate of Landfill Settlements due to Mechanical and Decompositional Processes, 837
- Owolabi, Abidemi  
Development of an Industry Foundation Classes Assembly Viewer, 257
- Oyetunji, Adetokunbo A.  
Relative Effectiveness of Project Delivery and Contract Strategies, 288
- Ozaydin, Kutay  
*see* Guler, Goknil, 1645
- Ozbakkaloglu, Togay  
Seismic Behavior of High-Strength Concrete Columns Confined by Fiber-Reinforced Polymer Tubes, 243
- Ozbay, K.  
Modeling and Analysis of the Link between Accessibility and Employment Growth, 1703
- Ozbey, M. Cem  
*see* Rathje, Ellen M., 863
- Ozcebe, Guney  
*see* Canbay, Erdem, 1541

- Özger, Mehmet**  
*see* Uyumaz, Ali, 1038
- Özkandemir, V.**  
*see* Göğüş, M., 1193
- Ozmen, D.**  
*see* Ozbay, K., 1703
- Ozorhon, Beliz**
- Case-Based Reasoning Model for International Market Selection, 381
- Pacheco, Sadott**
- Removal of Inorganic Mercury from Polluted Water using Structured Nanoparticles, 621
- Packer, Jeffrey A.**  
*see* Scica, Michael V., 1143
- Packham, I. S. J.**  
*see* Rafiq, M. Y., 254
- Pagalthivarthi, K. V.**  
*see* Naidu, A. S. K., 267
- Pagliara, Stefano**
- Energy Dissipation on Block Ramps, 935
- Energy Dissipation on Reinforced Block Ramps, 1197
- Flow Resistance of Rock Chutes with Protruding Boulders, 986
- Hydraulics of Plane Plunge Pool Scour, 976
- Pai, Tzu-Yi**  
*see* Tsai, Yung-Pin, 602
- Palau-Salvador, Guillermo**
- Real Local Losses Estimation for On-Line Emitters Using Empirical and Numerical Procedures, 1224
- Palmer, A. C.**  
*see* Damgaard, J. S., 1883
- de Groot, M. B.**, 1877
- Teh, T. C.**, 1878
- Pamukcu, Sibel**
- Thermoelastic Enhancement of Damping of Sand using Synthetic Ground Rubber, 824
- see* Puppala, Anand J., ed., 2087
- Pan, Ernan**  
*see* Wang, Cheng-Der, 12
- Pan, Tongyan**
- Effect of Coarse Aggregate Morphology on Permanent Deformation Behavior of Hot Mix Asphalt, 1726
- Panariello, Gary**  
*see* Abruzzo, John, 1404
- Pandey, A. K.**
- Strain Rate Model for Dynamic Analysis of Reinforced Concrete Structures, 1576
- Pandey, P. C.**  
*see* Thakkar, Bhairav K., 483
- Pandit, Aarti**  
*see* Zhu, Yimin, 268
- Pang, H. W.**  
*see* Zhang, L. M., 854
- Panizzo, Andrea**
- EOF Analysis of Complex Response of Venice Mobile Gates, 1872
- Panoskalsis, Vassilis P.**  
*see* Bahuguna, Saurabh, 458
- Pantazopoulou, S. J.**  
*see* Tastani, S. P., 190
- see* Tastani, S. P., 227
- Pantelides, Chris P.**  
*see* Reay, Jason T., 125
- see* Saenz, Nicolas, 212
- Paolucci, Roberto**
- Ground Motion Induced by Train Passage, 455
- Papadimitriou, G.**  
*see* Rogers, C. D. F., 1288
- Papagiannakis, A. T.**
- Traffic Data Collection Requirements for Reliability in Pavement Design, 1688
- Papagiannakis, A. T., P.E.**
- Utilizing Clustering Techniques in Estimating Traffic Data Input for Pavement Design, 1759
- Papavasiliou, V.**  
*see* Loizos, A., 1770
- Papouli, Katerina D.**  
*see* Bahuguna, Saurabh, 458
- Pappas, Michael P.**  
*see* Gibson, G. Edward, Jr., 1241
- Paquier, A.**  
*see* Proust, S., 1026
- Paradis, Francois**  
*see* Morency, Maxim, 1300
- Parekh, Minal L.**, ed.  
*see* Wiltshire, Richard L., ed., 2070
- Parida, Bhagabat P.**  
*see* Mishra, Govinda C., 50
- Parihar, A. S.**  
*see* Srinivas, Y., 468
- Paris, Deidre E.**
- Impact of Property Management Services on Affordable Housing Residents in Atlanta, Georgia, 1387
- Park, Chang Ho**  
*see* Suh, Wonho, 1734
- Park, Eun Sug**  
*see* Fitzpatrick, Kay, P.E., 1684
- Park, H.**
- Improved STrength Model for Interior Flat Plate-Column Connections Subject to Unbalanced Moment, 1509
- Park, Heekyung**
- Uncertainty Analysis of Mound Monitoring for Recharged Water from Surface Spreading Basins, 752
- Park, Hyo Seon**
- Distributed Hybrid Genetic Algorithms for Structural Optimization on a PC Cluster, 1625
- Park, Jae Kwang**  
*see* Ahn, Chang Hoon, 701

## AUTHOR INDEX

Peng

- Park, Junboum  
*see* Lee, Seunghak, 632
- Park, Moonseo  
*see* Lee, SangHyun, 273
- Park, Moonseo  
*see* Lee, SangHyun, 333
- see Na, Lim Jay, 394
- see Nepal, Madhav Prasad, 306
- Park, Peter Young-Jin  
*see* Suh, Wonho, 1734
- Park, Sejung  
*see* Madanat, Samer, 1156
- Park, Sooyong  
Blind Test Results for Nondestructive Damage Detection in a Steel Frame, 1520
- Park, Sung-Kil  
*see* Cort, Todd L., 595
- Parker, Andrew  
*see* Zou, Rui, 644
- Parker, D. S., P.E.  
New Process Design Procedure for Dealing with Variabile Trickling Filter Effluent Suspended Solids, 684
- Parker, Gary  
*see* Wong, Miguel, 1049
- Parker, Harvey W., ed.  
*see* Morgan, Dudley R., ed., 2086
- Parkinson, Bradford W.  
*see* Gebre-Egziabher, Demoz, 68
- Parks, Gary A., P.E.  
At a Crossroads — Is Value-based Compensation the Answer?, 1919
- Parks, Jeffrey L.  
Precipitative Removal of As, Ba, B, Cr, Sr, and V using Sodium Carbonate, 653
- Parra-Montesinos, Gustavo J.  
Behavior of Steel Double-Channel Built-Up Chords of Special Truss Moment Frames under Reversed Cyclic Bending, 1571  
*see* Fargier-Gabaldón, Luis B., 1540
- Parsons, Robert L., ed.  
Foundation Analysis and Design -- Innovative Methods, 2067
- Parsons, S. B.  
*see* Guganesharajah, K., 1036
- Pascal, M.  
Investigation of the Influence of Sprinkler Fins and Dissolved Air on Jet Flow, 1168
- Patel, Virendra C.  
*see* Yue, Wusi, 996
- Patrick, Michael D.  
Sensitivity of Live Load Distribution Factors to Vehicle Spacing, 117
- Patton, George C., P.E.  
*see* Phillips, James M., III, P.E., 2031
- Pau, John C.  
Performance of Parallel Implementations of an Explicit Finite-Volume Shallow-Water Model, 255
- Paul, D. K.  
*see* Pandey, A. K., 1576
- Paulino, Glauco H.  
*see* Buttler, William G., 459
- see Song, Seong Hyek, 563
- see Walters, Matthew C., 435
- Paulson, Boyd C., Jr.  
*see* Tatum, C. B., P.E., 385
- Pavic, Aleksandar  
*see* Reynolds, Paul, 1385
- Pavlou, Eleni  
Response of Nonstructural Components in Structures with Damping Systems, 1547
- Pawlak, Geno  
*see* Nakaza, Eizo, 1858
- Payero, José O.  
*see* Irmak, Suat, 1228
- Pearson, Cynthia  
Collapse of the Quebec Bridge, 1907, 1373
- Pecce, Marisa  
Response Prediction of RC Beams Externally Bonded with Steel-Reinforced Polymers, 207
- Pedreschi, Remo  
Predicting the Shear Strength of Mechanical Clinching in Cold-Formed Steel Structures, 1308
- Pei, Jin-Song  
New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. I: Formulation, 571
- New Approach to Designing Multilayer Feedforward Neural Network Architecture for Modeling Nonlinear Restoring Forces. II: Applications, 572
- Pearson, William L.  
Design of Rock Protection to Prevent Erosion by Water Flows Down Steep Slopes, 1044
- Pekau, O. A.  
Three-Degree-of-Freedom Rigid Model for Seismic Analysis of Cracked Concrete Gravity Dams, 537
- Peköz, T.  
*see* Schafer, B. W., 1459
- Pellinen, Terhi K.  
*see* Llenín, José A., 1388
- Peña, E.  
*see* Puertas, J., 1069
- Peña-Mora, Feniosky  
*see* Aldunate, Roberto, 247
- see Lee, SangHyun, 273
- see Lee, SangHyun, 333
- Pender, Gareth  
*see* Cao, Zhixian, 1041
- see* Cao, Zhixian, 1059
- Peng, Dingzhi  
Reservoir Storage Curve Estimation Based on Remote Sensing Data, 1087
- Peng, Zan-Guo  
*see* Zhu, Jian-Hang, 722

- Penumadu, Dayakar  
*see* Lin, Han, 17  
*see* Lin, Han, 489
- Peot, Christopher, P.E.  
*see* Gabriel, Steven A., 652
- Perera, Ricardo  
Structural Damage Detection via Modal Data with Genetic Algorithms, 1586
- Pérez, G.  
One-Dimensional Model of Shallow Water Surface Waves Generated by Landslides, 977
- Periketi, R. K.  
*see* Fox, G. A., 1133
- Perko, Howard A., P.E.  
Mars Soil Mechanical Properties and Suitability of Mars Soil Simulants, 73
- Perng, Yeng-Horng  
Exploring the Bidding Situation for Economically Most Advantaged Tender Projects using a Bidding Game, 350
- Perry, M.R. @rshall Space Flight Center (MSFC), in Huntsville, Alabama.  
*see* Eodiford, Melanie P., 2011
- Perttula, Pia  
Improving the Safety and Efficiency of Materials Transfer at a Construction Site by using an Elevator, 371
- Pestana, Juan M.  
Small-Strain Behavior of Granular Soils. I: Model for Cemented and Uncemented Sands and Gravels, 876  
*see* Salvati, Lynn A., 877
- Petcherdchoo, Aruz  
*see* Neves, Luís A. C., 1619
- Peter, J. Annie  
Investigations on the Static Behavior of Self-Compacting Concrete Under-Reamed Piles, 1305
- Peterman, Robert J.  
*see* Rasheed, Hayder A., 231
- Petermeier, David, P.E.  
*see* Kober, Aaron, P.E., 2022
- Peters, Robert W.  
*see* Sisiopiku, Virginia P., 663
- Petersen, Elijah J.  
Screening Level Risk Assessment of Heavy Metal Contamination in Cleveland Area Commons, 627
- Petersen, James N.  
*see* Alam, Mahbub, 623
- Peterson, Lance N.  
*see* Dettmers, Dana L., 1952
- Peterson, P. F.  
*see* Forsberg, C. W., 432
- Petrou, Michael F.  
*see* Aidoo, John, 138
- Peyton, Brent M.  
*see* Alam, Mahbub, 623
- Pfister, Michael  
Bottom Aeration of Stepped Spillways, 1014
- Pham, Huy Binh  
Prediction Models for Debonding Failure Loads of Carbon Fiber Reinforced Polymer Retrofitted Reinforced Concrete Beams, 193
- Pham, Maria M.  
Experimental Capacity Assessment of Cold-Formed Boxed Stud and C Stud Wall Systems used in Australian Residential Construction, 1502
- Pham, Thang  
*see* Wu, Jonathan T. H., 855
- Pham, Xuan P.  
Generic Design of V-Shape and Vane-Type Breakwaters to Reduce Green Water Load Effects on Deck Structures and Containers of Ships: Case Study, 1860
- Phelan, R. Scott  
*see* Budek, Andrew, 89
- Phelan, R. Scott, P.E.  
Full-Scale Measurements to Investigate Rain — Wind Induced Cable-Stay Vibration and its Mitigation, 133
- Pheng, Low Sui  
*see* Arain, Faisal Manzoor, 1372
- Phillips, Cynthia A.  
*see* Berry, Jonathan, 1823
- Phillips, James M., III, P.E.  
Royal Treatment, 2031
- Phohomsiri, Phailaung  
Time-Delayed Positive Velocity Feedback Control Design for Active Control of Structures, 503
- Phoon, K. K., ed.  
*see* Parsons, Robert L., ed., 2067
- Photiou, Nikolaos K.  
Selection of Carbon-Fiber-Reinforced Polymer Systems for Steelwork Upgrading, 1335
- Phungpaingam, B.  
Postbuckling of Beam Subjected to Intermediate Follower Force, 436
- Pi, Yong-Lin  
Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. I: Theory, 1515  
Second Order Nonlinear Inelastic Analysis of Composite Steel-Concrete Members. II: Applications, 1516
- Picado-Santos, Luís  
*see* Capitão, Silvino Dias, 1704
- Pichler, Bernhard  
Loading of a Gavel-Buried Steel Pipe Subjected to Rockfall, 913
- Pichler, Christian  
Safety Assessment of Concrete Tunnel Linings under Fire Load, 1534
- Pickus, Jonathan M.  
*see* Samuels, William B., 970
- Pietrucha, Martin T., P.E.  
Effects of Traffic Characteristics and Mounting Location on the Visibility of On-Premise Commercial Signs, 1758

## AUTHOR INDEX

Pousa

- Piaudier-Cabot, Gilles  
*see* Turcry, Philippe, 1266
- Pilakoutas, K.  
*see* Neocleous, K., 1339
- Pilakoutas, Kypros  
*see* Guadagnini, Maurizio, 235
- Pines, David S.  
*see* Leshem, Ehud N., 619
- Pinheiro, A. N.  
*see* Melo, J. F., 936
- Pinto, Federico  
Three-Dimensional Indirect Boundary Element Method Formulation for Dynamic Analysis of Frames Buried in Semi-infinite Elastic Media, 536
- Pinto, Paolo E.  
*see* Lupoi, Giorgio, 473
- Pirnie, Erica F.  
Transformation of DDT and its Metabolites by Various Abiotic Methods, 662
- Pisani, Marco A.  
Evaluation of Bending Strength of RC Beams Strengthened with FRP Sheets, 220
- Pivonka, P.  
*see* Fletcher, H. R., 608
- Plakantaras, V.  
*see* Tastani, S. P., 190
- Plaut, Raymond H.  
Postbuckling of Elastic Columns with Second-Mode Imperfection, 527
- Playán, E.  
*see* Lecina, S., 1199  
*see* Lecina, S., 1200
- Plumtree, A.  
*see* Al-Mayah, A., 1358
- Pocock, James B.  
Constructability State of Practice Report, 325
- Podgornery, R. K.  
Evaluating the Long-Term Performance of Geosynthetic Clay Liners Exposed to Freeze-Thaw, 804
- Podstavek, Josef  
*see* Vondrak, Jiri, 1650
- Poh, H. Y.  
Soil Stabilization using Basic Oxygen Steel Slag Fines, 1285
- Pokhriyal, S. P.  
*see* Rao, V. V. L. Kanta, 1379
- Pokrajac, Dubravka  
*see* Manes, Costantino, 1028
- Poku, Stephen E.  
Construction Scheduling and Progress Control using Geographical Information Systems, 285
- Polak, Elijah  
*see* Royston, Johannes O., 445
- Polak, John  
*see* Robinson, Steve, 1730
- Pollack, A. K.  
*see* Eisinger, D. S., 1756
- Pologruto, Michael  
Study of In Situ Pavement Material Properties Determined from FWD Testing, 1745
- Ponti, Norberto  
*see* Rinaldi, Victor, 784
- Poole, Toy  
*see* Rollings, Raymond S., 1370
- Poon, Chi-Sun  
*see* Lu, Ming, 408
- Poorooshasl, Hormoz  
*see* Saad, Bassam, 1705
- Poovarodom, Nakhorn  
*see* Puengern, Tawich, 1517
- Popescu, Mihaela  
*see* Singh, Rajkeshar, 84
- Porbaha, Ali, ed.  
Ground Modification and Seismic Mitigation, 2072
- Porcino, Daniela  
*see* Ghionna, Vito Nicola, 797
- Porporato, Amilcare  
*see* Ridolfi, Luca, 447
- Porter, Andrea  
Fuzzy Geographic Information Systems for Phytoremediation Plant Selection, 596
- Porter, Keith A.  
*see* Ching, Jianye, 474
- Porto, Paolo  
*see* Ferro, Vito, 1082
- Ports, Michael A., ed.  
*see* Field, Richard, ed., 2052
- Posbergh, Thomas  
*see* Zhao, Jian, 1584
- Post, Carol, P.E.  
Landmark Library, 2021
- Poston, Randall W.  
*see* Smith-Pardo, J. Paul, 110
- Potgieter, J. H.  
*see* Potgieter-Vermaak, S. S., 1332
- Potgieter-Vermaak, S. S.  
Metakaolin as an Extender in South African Cement, 1332
- Potisuk, Tanarat  
*see* Higgins, Christopher, P.E., 173
- Potts, D. M.  
*see* Grammatikopoulou, A., 41
- Poulos, H. G.  
*see* Surjadinata, J., 49
- Poulos, Harry G.  
Raked Piles — Virtues and Drawbacks, 852
- Pousa, Jorge L.  
*see* Guariglia, Dardo O., 1195

- Powell, Anne Elizabeth  
The Widening Gulf, 2027
- Powell, J. David  
*see* Gebre-Egziabher, Demoz, 68
- Powell, Jon  
*see* Jain, Pradeep, 671
- Powlson, David  
*see* Abichou, Tarek, 607
- Powrie, W.  
*see* Cox, S. E., 859
- Poyet, Stéphane  
Influence of Water on Alkali-Silica Reaction: Experimental Study and Numerical Simulations, 1328
- Prachasaree, Woraphot  
Performance Evaluation of FRP Bridge Deck Component under Torsion, 146  
*see* Laosiriphong, Krit, 153
- Pradhan, Anu R.  
*see* Laefer, Debra F., 1695
- Pradhan, B.  
Soil — Nail Pullout Interaction in Loose Fill Materials, 36
- Pradhan, P. K.  
*see* Baidya, D. K., 789
- Pradhan, Shashank K.  
DSC Model for Soil and Interface Including Liquefaction and Prediction of Centrifuge Test, 799
- Prairie, James R.  
Modified K-NN Model for Stochastic Streamflow Simulation, 1110
- Prakash, T.  
*see* Ganapathi, M., 528
- Prasad, A. Meher  
*see* Srinivas, S., 1767
- Prasad, A. Srinivasa  
Optimal Irrigation Planning under Water Scarcity, 1189
- Prasertmanukitch, S.  
*see* Tierney, M. J., 622
- Prashant, Amit  
*see* Lin, Han, 17
- Prashanth, S.  
Anaerobic Degradability: Effect of Particulate COD, 637
- Prashker, Joseph N.  
*see* Hollander, Yaron, 1778
- Prato, Carlos A.  
*see* Pinto, Federico, 536
- Pré, Pascale  
*see* Yazbek, Waël, 648
- Preis, Ami  
Contamination Source Identification in Water Systems: A Hybrid Model Trees-Linear Programming Scheme, 1828
- Prendergast, John  
*see* Rodgers, Michael, 685
- Presti, Diego C. F. Lo  
ONDA: Computer Code for Nonlinear Seismic Response Analyses of Soil Deposits, 800
- Price, A. D. F.  
*see* Soetanto, R., 316
- Price, Thomas H., P.E.  
*see* Johnston, Douglas M., 1804
- Prion, H.  
*see* Leijten, A. J. M., 1568
- Prisyazhnuk, V. A.  
Pressure Drop as a Criterion of a Steam-Turbine Plant's Efficiency, 423
- Pritchard, David  
Rate of Deposition of Fine Sediment from Suspension, 985
- Propato, Marco  
Contamination Warning in Water Networks: General Mixed-Integer Linear Models for Sensor Location Design, 1824
- Proszek, James J.  
*see* Ariaratnam, Samuel T., 1437
- Prota, A.  
Experimental In-Plane Behavior of Tuff Masonry Strengthened with Cementitious Matrix — Grid Composites, 210
- Prota, Andrea  
*see* Pecce, Marisa, 207
- Proust, S.  
Flow in Compound Channel with Abrupt Floodplain Contraction, 1026
- Prozzi, Jorge, ed.  
*see* Huang, Baoshan, ed., 2079
- Prozzi, Jorge A.  
*see* Hong, Feng, 1144
- Pryke, Stephen D.  
Legal Issues Associated with Emergent Actor Roles in Innovative U.K. Procurement: Prime Contracting Cast Study, 1413
- Pryor, S. C.  
*see* Barthelme, R. J., 430
- Pserng, H. Ping  
Developing a Resource Supply Chain Planning System for Construction Projects, 327
- Puci, Ignazio  
*see* Presti, Diego C. F. Lo, 800
- Puckett, Jay A.  
*see* Patrick, Michael D., 117
- Puddicombe, Michael S.  
The Limitations of Planning: The Importance of Learning, 382
- Puente, I.  
Buckling of GFRP Columns: An Empirical Approach to Design, 242
- Puertas, J.  
Bat Echolocation Interfering with Ultrasonic Sensors, 1069

## AUTHOR INDEX

Rahardjo

- Pulaski, Michael H.  
Constructability Practices to Manage Sustainable Building Knowledge, 91
- Pulido-Velázquez, Manuel  
Economic Optimization of Conjunctive Use of Surface Water and Groundwater at the Basin Scale, 1848
- Pulnern, Tawich  
On the Free Vibrations of Variable-Arc-Length Beams: Analytical and Experimental, 1517
- Puntel, Eric  
Fracture Mechanics Based Model for Joints under Cyclic Loading, 556
- Punthatacha, Koonnamas  
Volume Change Behaviors of Expansive Soils Stabilized with Recycled Ashes and Fibers, 1292  
*see* Puppala, Anand J., P.E., 846
- Puppala, Anand  
*see* Inyang, Hilary I., 1289
- Puppala, Anand J., ed.  
Site and Geomaterial Characterization, 2087
- Small-Strain Shear Moduli of Chemically Stabilized Sulfate-Bearing Cohesive Soils, 808
- Puppala, Anand J., P.E.  
Soil-Water Characteristic Curves of Stabilized Expansive Soils, 846  
*see* Punthatacha, Koonnamas, 1292
- Purcell, Patrick J.  
Physical Analog of the Linear Reservoir, 1089
- Puri, Sunil  
Assessment of Localized Damage in Concrete under Compression using Acoustic Emission, 1296
- Putz, Gordon J.  
*see* McLeod, Shaun M., 750
- Pyzocha, Michael J.  
Vapor Leak Detection for an Underground Storage Tank System, 703
- Qi, H.  
*see* Serrette, R., 1497
- Qi, Shuang  
PCB Volatilization from Sediments, 594
- Qian, Yi  
*see* Zhou, Ping, 597
- Qiao, Long  
*see* Budek, Andrew, 89
- Qiao, Pizhong  
*see* Cao, Maosen, 531  
*see* Lestari, Wahyu, 203  
*see* Wang, Jialai, 466
- Qiu, Tong  
Hydraulic Damping of Saturated Poroelastic Soils During Steady-State Vibration, 523
- Qiu, Xiangjun  
Full Two-Dimensional Model for Rolling Resistance: Hard Cylinder on Viscoelastic Foundation of Finite Thickness, 565
- Qiu, Y. F.  
Design and Performance of Stone Mastic Asphalt, 1768
- Qi-Oquill, Osama  
Future Environmental Regulation Issues to Promote Energy Efficiency, 427
- Qu, Junying  
*see* Ramamurthy, A. S., 954  
*see* Ramamurthy, A. S., 1212  
*see* Ramamurthy, A. S., 1219
- Quader, Asif  
Peak Discharge Estimation using Analytical Probabilistic and Design Storm Approaches, 1075
- Quang, Truong  
*see* Ogunlana, Stephen, 1247
- Quanrud, David M.  
*see* Drewes, Jörg E., 748
- Quaranta, J. D.  
*see* Warren, K. A., 880
- Quek, S. T.  
*see* Koh, C. G., 1638
- Quershi, Zafar H.  
*see* Vijayaraghavan, Krishna, 680
- Quiñones-Bolaños, Edgar  
Modeling Water Movement and Flux from Membrane Permeation Systems for Wastewater Microfiltration, 714
- Rabideau, Alan J.  
*see* Bartelt-Hunt, Shannon L., 686
- Rabuñal, J.  
*see* Puertas, J., 1069
- Radivojević, Ana  
Evolution of Bricks and Brick Masonry in the Early History of its Use in the Region of Today's Serbia, 1341
- Radwan, Essam, P.E.  
*see* Yan, Xuedong, 1738
- Rafferty, Alannah  
*see* Rowlinson, Steve, 1414
- Rafiq, M. Y.  
Visualizing Search and Solution Spaces in the Optimum Design of Biaxial Columns, 254  
*see* Zhou, G. C., 276
- Ragheb, Katherine  
*see* Blatchley, Ernest R., III, 742
- Raghuvanshi, N. S.  
Runoff and Sediment Yield Modeling using Artificial Neural Networks: Upper Siwane River, India, 1078
- Raghuvanshi, Narendra S.  
*see* Sahoo, Bhabagraghi, 1124
- Rahaman, S. M. B.  
*see* Nakaza, Eizo, 1858
- Rahardjo, H.  
*see* Yang, H., 1105
- Rahardjo, Harianto  
*see* Thu, Trinh Minh, 815

- Rahbar, Nima**  
*see* Alshawabkeh, Akram N., P.E., 870
- Rahman, M. Motiar**  
*see* Ling, Florence Yean Yng, 1412
- Rainville, Francois**  
*see* Rennie, Colin D., 955
- Rais-Rohani, Masoud**  
*see* Thompson, Michel D., 1626
- Rajagopal, K.**  
*see* Latha, G. Madhavi, 14
- Rajagopal, K. R.**  
*see* Krishnan, J. Murali, 15  
*see* Krishnan, J. Murali, 497
- Rajagopalan, Balaji**  
*see* Prairie, James R., 1110
- Rajan, S. D.**  
*see* Sharda, J., 62
- Rajar, Rudi**  
*see* Ćetina, Matjaž, 943
- Rajaratnam, Nallamuthu**  
*see* Liu, Minnan, 1007  
*see* Zhao, Can-Hua, 1058
- Raju, K. Srinivasa**  
*see* Kumar, D. Nagesh, 1178
- Rakha, Hesham**  
 Analytical Procedures for Estimating Capacity of Free-way Weaving, Merge, and Diverge Sections, 1731  
 Issues and Solutions to Macroscopic Traffic Dispersion Modeling, 1723  
*see* Farzaneh, Mohamadreza, 1722
- Ralegaonkar, Rahul V.**  
*see* Gupta, Rajiv, 422
- Ramachandra, L. S.**  
*see* Girish, J., 448  
*see* Singha, Maloy K., 548
- Ramakrishna, Devikarani M.**  
 Iron Oxide Coated Sand for Arsenic Removal: Investigation of Coating Parameters using Factorial Design Approach, 1962
- Ramamoorthy, Sathish K.**  
 Probabilistic Demand Models and Fragility Curves for Reinforced Concrete Frames, 1593
- Ramamurthy, A. S.**  
 3D Simulation of Combining Flows in 90° Rectangular Closed Conduits, 954
- Nonlinear PLS Method for Side Weir Flows, 1219
- VOF Model for Simulation of a Free Overfall in Trapezoidal Channels, 1212
- Ramana, G. V.**  
*see* Abuel-Naga, H. M., 862
- Ramanjaneyulu, K.**  
*see* Sasimal, Saptarshi, 1392
- Ramirez, Julio A.**  
*see* Smith-Pardo, J. Paul, 110
- Ramirez, Mark**  
*see* Gabriel, Steven A., 652
- Ramm, Ekkehard**  
*see* Leukart, Michael, 465
- Ramme, Bruce W.**  
*see* Naik, Tarun R., 1347
- Ramos, C. M.**  
*see* Melo, J. F., 936
- Ramos, G.**  
 Normalized Test for Prediction of Debonding Failure in Concrete Elements Strengthened with CFRP, 240
- Randall, Andrew Amis, P.E.**  
*see* McCue, Terrence Michael, P.E., 720
- Randall, Clifford**  
*see* Cokgor, Emin Ubay, 590
- Randall, J.**  
*see* Salem, O., 1980
- Randhir, Timothy**  
*see* Matteo, Michelle, 1815
- Randle, Timothy**  
*see* Greimann, Blair, 1003
- Randolph, John**  
*see* Dougherty, Mark, 643
- Randolph, Mark**  
*see* Gourvenec, Susan, 27
- Randolph, Mark F.**  
 Numerical Analysis of T-Bar Penetration in Soft Clay, 53  
*see* Chung, Shin Fun, 887
- Ranjan, R.**  
*see* Srinivas, Y., 468
- Ranjithan, S. Ranji**  
*see* Kumar, Sujay V., 1840
- Rao, K. S. Subba**  
*see* Choudhury, Deepankar, 30
- Rao, M. M.**  
 Modal Seismic Control of Building Frames by Artificial Neural Network, 252
- Rao, M. V. B.**  
*see* Rao, V. V. L. Kanta, 1379
- Rao, N. N.**  
 Fenton and Electro-Fenton Methods for Oxidation of H-Acid and Reactive Black 5, 624
- Rao, P. Rama Mohan**  
*see* Reddy, N. Bhanu Prakasham, 973
- Rao, R. Seshagiri**  
*see* Babu, G. L. Sivakumar, 1754
- Rao, S. V. N.**  
 Optimal Pumping from Skimming Wells, 1118
- Rao, V. V. L. Kanta**  
 Structural Evaluation of Cement Concrete Roads in Mumbai City, 1379
- Rasa, Pirkko-Liisa**  
*see* Peritula, Pia, 371

## AUTHOR INDEX

Ren

- Rasdorf, William, P.E.  
*see* Abudayyeh, Osama, P.E., 246  
*see* Cai, Hubo, 1646
- Rashed, Hayder A.  
Analysis and Design Procedure for FRP-Strengthened Prestressed Concrete T-Girders Considering Strength and Fatigue, 231  
*see* Nayal, Rim, 1363
- Rasmussen, K. J. R.  
*see* Bambach, M. R., 8
- Rasmussen, Kim  
*see* Lecce, Maura, 1489
- Rasmussen, Kim J. R.  
Design of Slender Angle Section Beam-Columns by the Direct Strength Method, 1458  
*see* Lecce, Maura, 1488
- Rassati, Gian A.  
*see* Fortney, Patrick J., 2013
- Rastas, Lea  
*see* Hedström, Annelie, 746
- Rathfelder, Klaus  
*see* Rubin, Hillel, 589
- Ratnje, Ellen M.  
Site-Specific Validation of Random Vibration Theory-Based Seismic Site Response Analysis, 863  
*see* Zekkos, Dimitrios, 893
- Raudkivi, Arved J.  
Transition from Ripples to Dunes, 1063
- Raupeach, M.  
*see* Schleser, M., 1338
- Rauschkolb, Jon  
*see* Pocock, James B., 325
- Raut, Ashok K.  
*see* Indraratna, Buddhima, 929
- Ravens, Thomas M.  
Computational Fluid Dynamics Analysis of Flow in a Straight Flume for Sediment Erodibility Testing, 1899
- Rawashdeh, Samih Al  
Satellite Monitoring of Urban Spatial Growth in the Amman Area, Jordan, 1796
- Ray, Indrajit  
*see* Chen, Yi, 216  
*see* Davalos, Julio F., 1346
- Reaph, Allison  
*see* Chinowsky, Paul S., 1416
- Reay, Jaron T.  
Long-Term Durability of State Street Bridge on Interstate 80, 125
- Rebeiz, Karim S.  
Boardrooms of Energy Firms in the Post-Enron Era, 424
- Relationship between Governance Structure and Financial Performance in Construction, 1239
- Recker, Will  
*see* Lee, Ming S., 1790
- Reckhow, David A.  
*see* Ergas, Sarina J., 618  
*see* Leshem, Ehud N., 619
- Reddi, Lakshmi, ed.  
*see* Lu, Ning, ed., 2046
- Reddi, Lakshmi N.  
*see* Kakuturu, Sai, 860  
*see* Kakuturu, Sai, 861
- Redding, A. Z.  
*see* Burns, S. E., 907
- Reddy, B. V. Venkatarama  
Strength and Elastic Properties of Stabilized Mud Block Masonry Using Cement-Soil Mortars, 1313
- Tensile Bond Strength of Soil-Cement Block Masonry Couplets using Cement-Soil Mortars, 1265
- Reddy, Krishna R.  
*see* Khodadoust, Amid P., 718
- Reddy, L. S.  
*see* Raghuwanshi, N. S., 1078
- Reddy, N. Bhana Prakasham  
Effect of Convergence on Nonlinear Flow in Porous Media, 973
- Reddy, T. S.  
*see* Jalilah, Santosh A., 1714
- Reeve, D. E.  
Explicit Expression for Beach Response to Non-Stationary Forcing near a Groyne, 1867
- Reible, Danny, P.E.  
*see* Murphy, Paul, 688
- Reid, Robert L.  
A Healing Place, 1998
- Paving America From Coast to Coast, 2016
- Special Report: The Big Uneasy, 2033
- Vaporizing the Gathering Storm, 2005
- Reiner, Mark  
High-Volume Fly Ash Concrete: Analysis and Application, 1976
- Reinhard, Martin  
*see* Yoo, H. Harold, 674
- Reinhardt, Hans-Wolf  
*see* Aicher, Simon, 507
- Reinhart, Debra R., P.E.  
*see* Jain, Pradeep, 671
- Reinhorn, Andrei M.  
*see* Sivaselvan, Mettupalayam V., 516
- Reinosdotter, Karin  
Handling of Urban Snow with Regard to Snow Quality, 612
- Reinschmidt, Kenneth  
Economic Value of Building Faster, 363
- Ren, Qingwen  
*see* Cao, Maosen, 531
- Ren, Wei-Xin  
Finite-Element Simulation and Design of Cold-Formed Steel Channels Subjected to Web Crippling, 1633

- Rennie, Colin D.**  
Case Study of Precision of GPS Differential Correction Strategies: Influence on aDcp Velocity and Discharge Estimates, 955
- Rens, Kevin**  
*see* Reiner, Mark, 1976
- Repetto, María Pía**  
Bimodal Alongwind Fatigue of Structures, 1528
- Ressler, J.**  
*see* Bradshaw, A. S., 1895
- Restrepo, José I.**  
*see* Bozorgzadeh, Azadeh, 158
- Reuter, J.**  
*see* Kavvas, M. L., 1099
- Revelli, Roberto**  
*see* Ridolfi, Luca, 447
- Revey, Gordon F., P.E.**  
Managing Rock Blasting Work in Urban Environments, 1978
- Reynolds, Paul**  
Vibration Performance of a Large Cantilever Grandstand during an International Football Match, 1385
- Rezgui, Yacine**  
Ontology-Centered Knowledge Management using Information Retrieval Techniques, 270
- Paving the Way to the Vision of Digital Construction: A Strategic Roadmap, 364
- Rha, ChangSoon**  
*see* Taciroglu, Ertugrul, 898
- Rhee, Keunyoung**  
*see* Briaud, Jean-Louis, 788
- Ribes, J.**  
*see* Chanona, J., 747
- Rice, Robert W., P.E.**  
Design Factors Affecting the Flow of Water through Below-Ground Concrete Vaults, 737
- Richards, Paul W.**  
Testing Protocol for Short Links in Eccentrically Braced Frames, 1554
- Testing Protocol for Short Links in Eccentrically Braced Frames, 1555
- Richardson, C. P.**  
Investigation of Boundary Shear Stress and Pollutant Detachment from Impervious Surface during Simulated Urban Storm Runoff, 592
- Richardson, Jay B.**  
*see* Li, Yadong, P.E., 638
- Krich, L.**  
Evaluating the Safety Risk of Narrow Medians using Reliability Analysis, 1701
- Ricketts, C.**  
*see* Gadhamshetty, V., 429
- see* McShannon, J., 1424
- Ricles, James M.**  
*see* Zhang, Xiaofeng, 1473
- see* Zhang, Xiaofeng, 1474
- Ridolfi, Luca**  
Green's Function of the Linearized de Saint-Venant Equations, 447
- Riebel, Florian**  
*see* Keller, Thomas, 244
- Riedel, J. J.**  
*see* Fakhimi, A., 31
- Rieker, Jeffrey D.**  
GIS Visualization and Analysis of River Operations Impacts on Endangered Species Habitat, 1816  
*see* Singh, Vijay P., 1175
- Riemer, Michael F.**  
*see* Zekkos, Dimitrios, 893
- Ries, Robert**  
*see* Bilec, Melissa, 1158
- see* Debella, David Col, 399
- Rifai, Hanadi S.**  
*see* Suarez, Monica P., 770
- Riggs, H. Ronald, P.E.**  
*see* Robertson, Ian N., 2009
- Rilett, Laurence R., P.E.**  
*see* Vanajakshi, Lelitha, 263
- Riley, David R.**  
*see* Horman, Michael J., 324
- see* Lapinski, Anthony R., 395
- see* Pulaski, Michael H., 91
- see* Thomas, H. Randolph, 1989
- Rinaldi, Victor**  
Resistivity Survey of the Subsurface Conditions in the Estuary of the Rio de la Plata, 784
- Rinaldi, Victor A.**  
Removal of Immiscible Contaminants from Sandy Soils Monitored by Means of Dielectric Measurements, 704
- Rinehart, R.**  
*see* Beavers, J. E., P.E., 377
- Ringler, Claudia**  
Valuing Fisheries and Wetlands using Integrated Economic-Hydrologic Modeling — Mekong River Basin, 150
- Ringö, Benoîte**  
*see* Morse, Brian, 184
- see* Morse, Brian, 185
- Rischmoller, Leonardo**  
Improving Value Generation in the Design Process of Industrial Projects using CAVT, 1243
- Rister, Brad**  
*see* Willett, David A., 1673
- Ritchey, John K.**  
*see* Setareh, Mehdi, 1371
- Ritdumrongkul, Sopon**  
Identification of the Location and Level of Damage in Multiple-Bolted-Joint Structures by PZT Actuator-Sensors, 1469
- Rivard, Hugues**  
*see* Mora, Rodrigo, 253

## AUTHOR INDEX

Rollins

- Rivero, Jesús A. Cacho  
Enhancement of Anaerobic Digestion of Excess Municipal Sludge with Thermal and/or Oxidative Treatment, 670
- Riviére, N.  
*see* Proust, S., 1026
- Rivin, Eugene I.  
"Giant Superelasticity Effect" in NiTi Superelastic Materials and Its Applications, 1360
- Rizkalla, Sami  
*see* Rosenboom, Owen, 238
- Rizzo, Andrea  
*see* Ekenel, Mahmut, 232
- Rizzo, Donna M.  
*see* Rossman, Anthony J., 659
- Rizzo, Piervincenzo  
*see* Matta, Fabio, 214
- Roarty, Hugh J.  
Laboratory Measurements of Bed Load Sediment Transport Dynamics, 1875
- Robayo, Oscar  
*see* Whiteaker, Timothy L., 1074
- Robert, Jean-Loup  
*see* Morse, Brian, 184
- Roberts, A. J.  
*see* Ioualalen, M., 1870
- Roberts, Philip J. W.  
*see* Daviero, Gregory J., 971  
*see* Tian, Xiaodong, 972
- Robertson, Ian N.  
Lessons from Katrina, 2009
- Robinson, Chet E.  
*see* Brandes, Horst G., 1672
- Robinson, J. Paul  
*see* Blatchley, Ernest R., III, 742
- Robinson, R. Bruce  
Concentration — Duration — Frequency Curves for pH in a Stream in the Great Smoky Mountains, 765
- Robinson, R. Bruce, P.E.  
*see* Hedrick, Kevin P., 1129
- Robinson, Steve  
Overtaking Rule Method for the Cleaning of Matched License-Plate Data, 1730
- Robson, Forrest  
*see* Cai, Hubo, 1646
- Roby, J. Chadwick  
*see* Robinson, R. Bruce, 765
- Rocha, David  
Sensitivity Analysis of Soil Hydraulic Properties on Subsurface Water Flow in Furrows, 1211
- Rochell, Rodger, P.E.  
*see* Stiller, William B., P.E., 142
- Rochfort, Quintin  
*see* He, Cheng, 944
- Rock, Steven A.  
*see* Albright, William H., 906
- Rockey, Christopher  
*see* Iyengar, Hal, P.E., 2000
- Rockne, Karl J.  
Nutrient Removal in a Cold-Region Wastewater Stabilization Pond: Importance of Ammonia Volatilization, 633
- Rodgers, Janise E.  
Effects of Connection Fractures on Global Behavior of Steel Moment Frames Subjected to Earthquakes, 1447
- Seismic Response and Damage Detection Analyses of an Instrumented Steel Moment-Framed Building, 1591
- Rodgers, Michael  
Novel Hybrid Filter for the Treatment of Septic Tank Effluent, 685
- Rodrigues, Carlos C.  
*see* Silva, Manuel A. G., 1297
- Rodriguez-Marek, Adrian  
Seismic Site Response for Near-Fault Forward Directivity Ground Motions, 928  
*see* Wartman, Joseph, 1395
- Roe, Philip L.  
*see* Vasconcelos, Jose G., 987
- Roesch, John  
*see* Agbulos, Albert, 317
- Roesler, Jeffrey  
*see* Rufino, Dulce, 1707
- Rogers, C. D. F.  
Stress Path Testing of Realistically Cured Lime and Lime/Cement Stabilized Clay, 1288  
*see* Barker, J. E., 1281
- Rogers, Peter  
*see* Brown, Casey, 1843
- Rojas, Eddy M.  
Multi-Agent Framework for General-Purpose Situational Simulations in the Construction Management Domain, 261
- Rojas, Eduardo  
Analysis of Deep Moisture Barriers in Expansive Soils. I: Constitutive Model Formulation, 43  
Analysis of Deep Moisture Barriers in Expansive Soils. II: Water Flow Formulation and Implementation, 44
- Rollings, Marian P.  
*see* Rollings, Raymond S., 1370
- Rollings, Raymond S.  
Investigation of Heaving at Holloman Air Force Base, New Mexico, 1370
- Rollins, Kyle M.  
Cyclic Lateral Load Behavior of a Pile Cap and Backfill, 883
- Pile Spacing Effects on Lateral Pile Group Behavior: Load Tests, 894
- Pile Spacing Effects on Lateral Pile Group Behavior: Analysis, 895  
*see* Cole, Ryan T., 884

- Romero, José Nicolás Ortiz  
Set Sprinkler Irrigation and Its Cost, 1214
- Romero, José R.  
*see* Anohin, Vadim V., 1047
- Romo, Miguel P.  
*see* Rojas, Eduardo, 43
- see Rojas, Eduardo, 44
- Rondinelli-Oviedo, Efrain A.  
*see* Wartman, Joseph, 1395
- Rose, Andrew T.  
*see* Brandon, Thomas L., 802
- Rose, Geoffrey  
*see* Li, Ruimin, 1721
- Rosenberg, David E.  
Derived Operating Rules for Allocating Recharges and Withdrawals among Unconnected Aquifers, 1803
- Rosenboom, Owen  
Behavior of Prestressed Concrete Strengthened with Various CFRP Systems Subjected to Fatigue Loading, 238
- Rosenwinkel, K.-H.  
*see* Makinia, J., 636
- Rosowsky, David, P.E., ed.  
*see* Crandell, Jay H., P.E., ed., 2083
- Rosowsky, David V.  
*see* Stewart, Mark G., 1933
- Ross, Mark A.  
*see* Geurink, Jeffrey S., 1102
- Rossman, Anthony J.  
Low-Temperature Soil Heating using Renewable Energy, 659
- Rothe, Christopher A.  
Using Patents to Advance the Civil Engineering Profession, 2020
- Rothermel, Joe S.  
*see* Dettmers, Dana L., 1952
- Rouaud, Olivier  
Behavior of an Air Curtain Subjected to Transversal Pressure Variations, 611
- Roufa, Garry, P.E.  
*see* Kwasniewski, Leslaw, 1391
- Roumi, Farshid  
*see* Shodja, Hossein M., 525
- Rousseau, Aymeric  
*see* Sisiopiku, Virginia P., 663
- Rowe, R. Kerr  
Compatibility with Jet A-1 of a GCL Subjected to Freeze — Thaw Cycles, 920
- Rowlinson, Steve  
Alliancing in Australia — No-Litigation Contracts: A Tautology?, 1414
- Roy, Amitava  
Role of an Amorphous Silica in Portland Cement Concrete, 1348
- Royer, Johannes O.  
Optimal Design with Probabilistic Objective and Constraints, 445
- Rteil, Ahmad A.  
*see* Hamad, Bilal S., 222
- Rubin, Hillel  
Enhancement of Remediation of NAPL Contaminated Fractured Permeable Formations — Modeling Study, 589
- Rüdinger, F.  
Optimal Vibration Absorber with Nonlinear Viscous Power Law Damping and White Noise Excitation, 439
- Ruess, F.  
Structural Design of a Lunar Habitat, 71
- Rufino, Dulce  
Effect of Slab-Base Interaction on Measured Concrete Pavement Responses, 1707
- Ruggaber, Timothy P.  
Enhancing Bioremediation with Enzymatic Processes: A Review, 1947
- Rujivipat, P.  
*see* Abuel-Naga, H. M., 862
- Ruotoistenmäki, Antti  
Comparison of Modeling and Measurement Accuracy of Road Condition Data, 1742
- Rushing, John F.  
Evaluation of Dust Palliatives for Unpaved Roads in Arid Climates, 1394
- Rushton, Betty, ed.  
*see* Field, Richard, ed., 2052
- Russell, Alan D.  
*see* Aziz, Ahmed M. Abdel, 1139
- Russell, James E.  
*see* Yi, Xianjie, 38
- Russell, Jefferey S., P.E.  
Mentoring in Engineering, 1909
- Russell, Jeffrey S.  
*see* Bank, Lawrence C., 208
- Ruth, Peter  
Static Equivalency in Progressive Collapse Alternate Path Analysis: Reducing Conservatism While Retaining Structural Integrity, 1401
- Rutschmann, Peter  
*see* Krüger, Susanne, 1024
- Ruud, Nels  
*see* Marques, Guilherme F., 1849
- Ruwanpura, Janaka  
*see* Moussa, Mohamed, 412
- Ruwanpura, Janaka Y.  
Innovative Final-Year Undergraduate Design Project Course using an International Project, 1432
- Ruxton, S.  
*see* Leijten, A. J. M., 1568
- Ryan, Keri L.  
Estimating Seismic Demands for Isolation Bearings with Building Overturning Effects, 1548

## AUTHOR INDEX

Sanaye

- Rys, Małgorzata  
*see* Nehate, Girish, 1739
- Saad, Bassam  
3D FE Analysis of Flexible Pavement with Geosynthetic Reinforcement, 1705
- Saalfeld, Brad, P.E.  
*see* Jones, Jason, P.E., 2012
- Saatcioglu, Murat  
*see* Ozbakkaloglu, Togay, 243
- Sabnis, S. S.  
*see* Bapat, J. D., 1310
- Sabourin, J. F.  
*see* Abida, H., 1170
- Sacks, R.  
Interpretation of Automatically Monitored Lifting Equipment Data for Project Control, 256
- Sadeghpour, Farnaz  
Computer-Aided Site Layout Planning, 302
- Sadek, Adel  
*see* Porter, Andrea, 596
- Saenz, Nicolas  
Short and Medium Term Durability Evaluation of FRP-Confining Circular Concrete, 212
- Safferman, Steve  
*see* Krou, Jean F., 733
- Sagüés, A. A.  
Vibrational Tension Measurement of External Tendons in Segmental Posttensioned Bridges, 161
- Saha, Mithun Kumar  
*see* Tan, Kiang Hwee, 236
- Sahoo, Bhabagraghi  
Flood Estimation by GIUH-Based Clark and Nash Models, 1124
- Sahoo, Goloka Behari  
Response of a Tropical Reservoir to Bubbler Destratification, 682
- Sahoo, T.  
*see* Kumar, P. Suresh, 540
- Sahuquillo, Andrés  
*see* Pulido-Velázquez, Manuel, 1848
- Saiidi, M. Saïd  
Development, Shake Table Testing, and Design of FRP Seismic Restrainers, 152
- Sain, Trisha  
Damage Assessment in Beams using Inverse Method, 469
- Saito, Mitsuru  
*see* Hereth, William R., 258
- Sakai, Junichi  
Unloading and Reloading Stress - Strain Model for Confined Concrete, 1449
- Sakano, Masahiro  
Monitoring of Steel Railway Floor Beams Prestressed by Steel Plates, 171
- Sakr, K.  
Effects of Silica Fume and Rice Husk Ash on the Properties of Heavyweight Concrete, 1301
- Salama, Hassan K.  
Effect of Heavy Multiple Axle Trucks on Flexible Pavement Damage using In-Service Pavement Performance Data, 1747
- Salameh, Zeina  
*see* Rebeiz, Karim S., 1239
- Salas, J. D.  
Stochastic Streamflow Simulation using SAMS-2003, 1177
- Saleh, Bassam  
*see* Rawashdeh, Samih Al, 1796
- Salehian, Armaghan  
Continuum Modeling of an Innovative Space-Based Radar Antenna Truss, 79
- Salem, O.  
Accelerating the Construction of a Highway Bridge in Ohio, 1980
- Lean Construction: From Theory to Implementation, 1256
- Salem, Ossama M., P.E.  
*see* Hegab, Mohamed, P.E., 347
- Salgado, R.  
*see* Foye, K. C., 888  
*see* Foye, K. C., 889
- Salim, H. A.  
Approximate Series Solution for Analysis of FRP Composite Highway Bridges, 225
- Salomons, Elad  
*see* Grayman, Walter M., 1832
- Salvati, Lynn A.  
Small-Strain Behavior of Granular Soils. II: Seismic Response Analyses and Model Evaluation, 877  
*see* Pestana, Juan M., 876
- Samaan, Magdy  
*see* Elmarkabi, Ahmed, 1743
- Samadhiya, N. K.  
*see* Singh, A. K., 34
- Samani, Hossein M. V.  
Optimization of Water Distribution Networks using Integer Linear Programming, 981
- Sammarco, Paolo  
*see* Panizzo, Andrea, 1872
- Sample, David J.  
Integrated Management of Irrigation and Urban Storm-Water Infiltration, 1839
- Samuels, William B.  
*RiverSpill: A National Application for Drinking Water Protection*, 970
- Sana, Ahmad  
Hydrodynamic Behavior of Asymmetric Oscillatory Boundary Layers at Low Reynolds Numbers, 1040
- Sanaye, Masoud  
Damage Localization and Finite-Element Model Updating Using Multiresponse NDT Data, 172

- Sanchez, C. A.  
*see* Furman, A., 1230
- Sánchez, José A.  
*see* Castro, María, 1680
- Sanchez-Arcilla, Agustin, ed.  
Coastal Dynamics 2005 -- State of the Practice, 2055
- Sánchez-Tembleque, F.  
*see* Puertas, J., 1069
- Sanchis, Luis H.  
*see* Palau-Salvador, Guillermo, 1224
- Sancio, Rodolfo B.  
*see* Bray, Jonathan D., 885
- Sanders, Brett F.  
Impact of Limiters on Accuracy of High-Resolution Flow and Transport Models, 443
- see* Begnudelli, Lorenzo, 968
- see* Pau, John C., 255
- Sands, Steven C.  
*see* Grubb, Dennis G., 831
- Sandven, R.  
*see* de Groot, M. B., 1877
- Sanford, Robert A.  
*see* Brennan, Rachel A., 673
- Sangameswaran, S.  
*see* Kura, B., 768
- Sanjou, Michio  
*see* Nezu, Ichisa, 999
- Sansalone, Mary  
*see* McLaskey, Gregory, 1389
- Santagata, Marika  
Laboratory Simulation of Field Sampling: Comparison with Ideal Sampling and Field Data, 810
- Santamaría, Jorge L.  
*see* Fuller, Barry J., 2015
- Santamarina, J. Carlos  
*see* Cho, Gye-Chun, 832
- Santos, Marcelo  
*see* Koohzare, Azadeh, 1663
- Saouma, Victor E.  
*see* Puntel, Eric, 556
- Sarathi, Partha  
*see* Faruque, M. A. A., 989
- Sarawit, A.  
*see* Schafer, B. W., 1459
- Sargand, Shad M.  
Rational Approach for Base Type Selection, 1746
- Sarkar, Arindam  
*see* Dey, Subhashish, 957
- Sarkar, Partha P.  
*see* Phelan, R. Scott, P.E., 133
- see* Wu, Fuqiang, 61
- Sarmiento, Oscar A.  
Critical Bed Shear Stress for Unisize Sediment, 949
- Sarnecki, Kathryn L.  
*see* Wrenn, Brian A., 591
- Sarvi, Majid  
*see* Li, Ruimin, 1721
- Sasani, M.  
Damping in Shear Beam Structures and Estimation of Drift Response, 522
- Sasani, Mehrdad  
New Measure for Severity of Near-Source Seismic Ground Motion, 1636
- Šašek, Ladislav  
Less is More, 2008
- Sasmal, Saptarshi  
Fuzzy Logic Based Condition Rating of Existing Reinforced Concrete Bridges, 1392
- Sassa, Kyoji  
*see* Gratchev, Ivan B., 790
- Sathananthan, Iyathurai  
Laboratory Evaluation of Smear Zone and Correlation between Permeability and Moisture Content, 867
- Satirapod, Chalermitchon  
GPS Precise Point Positioning Software for Ground Control Point Establishment in Remote Sensing Applications, 1642
- Sato, Chikashi  
Simultaneous and Sequential Photosynthesis of TCE and PCE, 586
- Sause, Richard  
Fatigue Life of Girders with Trapezoidal Corrugated Webs, 1543
- see* Abbas, Hassan H., 517
- see* Driver, Robert G., 1457
- Saussus, D. R.  
*see* Frost, J. D., 13
- Savage, Bruce M.  
*see* Johnson, Michael C., 1068
- Savic, Dragan A.  
*see* van Zyl, Jakobus E., 969
- Savšek-Safić, Simona  
Determination of Point Displacements in the Geodetic Network, 1648
- Savu, Paul  
*see* Bucur, Daniel, 1231
- Sawada, Sumio  
*see* Tobita, Tetsuo, 472
- Sawicki, A.  
*see* de Groot, M. B., 1877
- Sayal, Gautam  
*see* Rivin, Eugene I., 1360
- Sayed, T.  
*see* Richl, L., 1701
- Sayed, Tarek  
*see* Tabernero, Vener, 1763
- Sayles, Gregory D.  
*see* Qi, Shuang, 594

## AUTHOR INDEX

Seed

- Scardina, Paolo.**  
Fundamentals of Bubble Formation during Coagulation and Sedimentation Processes, 664
- Seawthorn, Charles.**  
HAZUS-MH Flood Loss Estimation Methodology. I: Overview and Flood Hazard Characterization, 1928
- HAZUS-MH Flood Loss Estimation Methodology. II: Damage and Loss Assessment, 1929
- Schaad, David E., P.E.**  
Using UCS as a Surrogate Performance Standard at the NCSU NPL Site, 738
- Schaenzlin, J.**  
*see* Ruess, F., 71
- Schaefer, B. W.**  
Complex Edge Stiffeners for Thin-Walled Members, 1459  
*see* Buonopane, S. G., 1465
- Schaefer, Benjamin W.**  
*see* Yu, Cheng, 1490
- Schauer, Barbara A., P.E.**  
*see* Schneider, Philip J., 1926
- Schexnayder, Cliff J.**  
*see* Telem, Dory, 299
- Schilling, Paul J.**  
*see* Roy, Amitava, 1348
- Schimek, Jennifer.**  
*see* Suarez, Monica P., 770
- Schleiss, Anton J.**  
*see* Bollaert, Erik F. R., 5
- see* De Cesare, Giovanni, 754  
*see* Manso, Pedro A., 3
- Schleser, M.**  
Application of Polymers to Textile-Reinforced Concrete, 1338
- Schlosser, Peter.**  
*see* Ho, David T., 774
- Schmeckpeper, Edwin R.**  
*see* Milligan, Jarrod H., 166
- Schnertmann, John H.**  
Estimating Slope Stability Reduction due to Rain Infiltration Mounding, 890
- Schmid, Bernhard H.**  
Artificial Neural Network Modeling of Dissolved Oxygen in a Wetland Pond: The Case of Hovi, Finland, 1090
- Schmidt, Arthur R.**  
*see* León, Arturo S., 1010
- Schmidt, David P.**  
*see* Kennedy, Matthew G., 710
- Schmitz, G. H.**  
*see* Wöhling, Th., 1206
- Schneider, James A.**  
*see* Chung, Shin Fun, 887
- Schneider, Lauren E.**  
Assessing the Hydrologic Performance of Best Management Practices, 1101
- Schneider, Philip J.**  
HAZUS — Its Development and Its Future, 1926
- Schneider, William H., IV**  
*see* Fitzpatrick, Kay, P.E., 1684
- Schober, Hans**  
The Berlin Connection, 2025
- Scholtes, Stefan**  
*see* de Neufville, Richard, 1147
- Scholz, Miklas**  
*see* Zheng, Jinghui, 1775
- Schriver, W. R.**  
*see* Beavers, J. E., P.E., 377
- Schultz, Arturo E.**  
*see* Berglund, Evan M., 121
- Schwarz, Charles R.**  
Statistics of Range of a Set of Normally Distributed Numbers, 1662
- Schwarz, Lois G.**  
Hydrocarbon Residuals and Containment in Microfine Cement Grouted Sand, 1284
- Schwingsackl, C. W.**  
Determination of Honeycomb Material Properties: Existing Theories and an Alternative Dynamic Approach, 74
- Scott, B.**  
*see* Foye, K. C., 888
- see* Foye, K. C., 889
- Scott, David W.**  
*see* Dempsey, Dwight D., 228
- Scott, Michael H.**  
Plastic Hinge Integration Methods for Force-Based Beam — Column Elements, 1462
- Scruggs, J. T.**  
Optimal Nonlocal and Asymmetric Structural Damping using Regenerative Force Actuation Networks, 532
- Scullion, Tom**  
*see* Chen, Dar-Hao, 1140
- Scullion, Tom, P.E.**  
*see* Chen, Dar Hao, 1690
- Seals, Roger K.**  
*see* Roy, Amitava, 1348
- Sears, K.**  
Density and Activity Characterization of Activated Sludge Flocs, 724
- Sebastian, Wendel M.**  
Performance Implications of Imperfectly Plastic Material in Metallic Structures with Nonmetallic Reinforcement, 1461
- Seco, A.**  
*see* Chanona, J., 747
- Seed, R. B.**  
*see* Moss, R. E. S., 812
- see* Moss, R. E. S., 873
- Seed, Raymond B.**  
*see* Cetin, K. Onder, 10

- Segal, Fred**  
Energy Evaluation for Ramberg — Osgood Hysteretic Model, 529
- Seible, F.**  
*see* Chou, C. C., 118
- Seica, Michael V.**  
Simplified Numerical Method to Evaluate the Mechanical Strength of Cast Iron Water Pipes, 1143
- Seignol, Jean-François**  
*see* Multon, Stéphane, 1317
- Sekhar, M.**  
Numerical Modeling and Analysis of Solute Velocity and Macrodispersion for Linearly and Nonlinearly Sorbing Solutes in a Single Fracture with Matrix Diffusion, 1104
- Selekwa, Majura**  
*see* Mussa, Renatus, 1693
- Seligson, Hope**  
*see* Scawthorn, Charles, 1928
- Sellier, Alain**  
*see* Poyet, Stéphane, 1328
- Semmens, Michael**  
*see* Weiss, Jeffrey D., 717
- Sen, Tapan K.**  
Probability of Fatigue Failure in Steel Catenary Risers in Deep Water, 539
- Sena Cruz, José M.**  
Bond Behavior of Near-Surface Mounted CFRP Laminate Strips under Monotonic and Cyclic Loading, 218
- Senior, Matthew J.**  
*see* Guo, Yiping, 1127
- Sennah, Khaled**  
*see* Elmarakbi, Ahmed, 1743
- Seo, Il Won**  
*see* Baek, Kyong Oh, 1033
- Seo, Ji Hyun**  
*see* Park, Hyo Seon, 1625
- Seppälä, Tomi**  
*see* Ruotoistenmäki, Antti, 1742
- Seracino, R.**  
Partial Interaction Shear Flow Forces in Continuous Composite Steel-Concrete Beams, 1460
- see* Liu, I. S. T., 199
- see* Liu, I. S. T., 200
- Serrano, Carlos**  
*see* Rinaldi, Victor, 784
- Serrano, Sergio E.**  
Development and Verification of an Analytical Solution for Forecasting Nonlinear Kinematic Flood Waves, 1107
- Serrette, R.**  
Cold-Formed Steel Frame Shear Walls Utilizing Structural Adhesives, 1497
- Setareh, Mehdi**  
Pendulum Tuned Mass Dampers for Floor Vibration Control, 1371
- Seto, K.**  
*see* Christenson, Richard E., 1524
- Severino, Edward**  
*see* El-Tawil, Sherif, P.E., 1
- Seyyedian, Hamid**  
Effect of Internal Moment Release on the Eigenfrequencies of Combined Linear Systems, 519
- Sezen, Halil**  
Seismic Performance of Industrial Facilities Affected by the 1999 Turkey Earthquake, 1367
- Shackelford, Charles D.**  
*see* Henning, John T., 892
- Shafizadeh, Kevan**  
Statistical Modeling of User Perceptions of Infrastructure Condition: Application to the Case of Highway Roughness, 1677
- Shah, S. P.**  
*see* Kuder, Katherine G., 1309
- Shahawy, Mohsen**  
*see* Chaallal, Omar, 191
- Shahriari, H.**  
Simulating Activated Sludge System by Simple-to-Advanced Models, 587
- Shahrokhnia, M. A.**  
Dimensionless Stage – Discharge Relationship in Radial Gates, 1184
- Shahrooz, Bahram M., P.E.**  
*see* Fortney, Patrick J., 2013
- Shahrour, Isam**  
*see* Lancelot, Laurent, 582
- Shaikhutdinov, Rustem**  
*see* Ching, Jianye, 474
- Shalabey, M. E. E.**  
Numerical Model of Saltwater Transport toward a Pumping Well, 1103
- Shamir, Eylon**  
Evaluation of the National Weather Service Operational Hydrologic Model and Forecasts for the American River Basin, 1111
- Shan, Bo**  
Residual Performance of FRP-Retrofitted RC Columns after being Subjected to Cyclic Loading Damage, 219
- Shane, Jennifer S.**  
Legal Challenge to a Best-Value Procurement System, 1906
- Shang, Chii**  
*see* Fang, Qian, 584
- Shang, J. Q., P.E.**  
Site-Specific Study on Stabilization of Acid-Generating Mine Tailings using Coal Fly Ash, 1277
- Shani, U.**  
*see* Lazarovich, N., 1225

## AUTHOR INDEX

Sheppard

- Shanmugam, Jayasiri  
*see* Shao, Yixin, 241
- Shannon, David M.  
*see* Elton, David J., P.E., 1417
- Shao, J. F.  
Elastoplastic Damage Modeling in Unsaturated Rocks and Applications, 23
- Shao, Yi-Chen  
*see* Chen, Liang-Chien, 1651
- Shao, Yixin  
Characterization of a Pultruded FRP Sheet Pile for Waterfront Retaining Structures, 1333
- Moment Capacities and Deflection Limits of PFRP Sheet Piles, 241
- see* Monkman, Sean, 1351
- Shapira, Aviad  
*see* Telem, Dory, 299
- see* Telem, Dory, 403
- Sharaf, Mohamed H.  
CFRP Strengthening for Punching Shear of Interior Slab — Column Connections, 230
- Sharara, Lokman M.  
*see* Ezeldin, A. Samer, 353
- Sharda, J.  
Modeling of Multilayer Composite Fabrics for Gas Turbine Engine Containment Systems, 62
- Sharif, Ali  
*see* Hanna, Adel M., 20
- Sharkey, L. J.  
*see* Hunt, W. F., 1232
- Sharma, A.  
*see* Srikant, R., 1094
- Sharma, Anil Kumar  
Zirconia-Supported Copper Oxide — A Catalyst for Removal of Vehicular Exhaust Gas Pollutants, 707
- Sharma, Anuj  
*see* Abbas, Montasir, P.E., 1702
- Sharma, Anupama  
*see* Shalabey, M. E. E., 1103
- Sharma, K. G.  
*see* Varadarajan, A., 35
- Sharma, Shambhu S.  
Monotonic and Cyclic Behavior of Two Calcareous Soils of Different Origins, 925
- Sharma, Vishal  
Residential Construction Lot Grading Approval Process Optimization: Case Study of City of Edmonton, 409
- Sharp, Sandra  
*see* Newson, Tim, 792
- Sharrett, Aurora L.  
*see* Bilec, Melissa, 1158
- Shastri, Y.  
Sensor Placement in Water Networks: A Stochastic Programming Approach, 1820
- Shazali, Mohammed A.  
Predicting Residual Strength in Unsaturated Concrete Exposed to Sulfate Attack, 1298
- Shea, Kristina  
Improving Full-Scale Transmission Tower Design through Topology and Shape Optimization, 1518
- Sheibani, Farrokh  
Effects of Environmental Action on Thermal Stress Analysis of Karaj Concrete Arch Dam, 487
- Sheikh, Shamim A.  
*see* Montoya, Esneyder, 1318
- Scheinman, Izhak  
*see* Jabareen, Mahmood, 574
- Shekar, Vimala  
*see* Laosiriphong, Krit, 153
- see* Prachasaree, Woraphot, 146
- Shekhar, Shashank  
*see* Rao, S. V. N., 1118
- Shen, Chengyue  
*see* Blatchley, Ernest R., III, 742
- Shen, Hayley H.  
*see* Ji, Shunying, 566
- Shen, Jinjin  
*see* Xu, Xingxin, 932
- Shen, Li Yin  
Strengths, Weaknesses, Opportunities, and Threats for Foreign-Invested Construction Enterprises: A China Study, 384
- Shen, Li-Yin  
Contractor Key Competitiveness Indicators: A China Study, 329
- Shen, Qiang  
Seismic Design and Analytical Modeling of Post-tensioned Hybrid Coupled Wall Subassemblies, 1539
- see* Kurama, Yahya C., 1538
- Shen, Qiping  
*see* Yu, Ann T. W., 404
- Shen, Shuilong  
*see* Hong, Zhenshun, 806
- Shen, Shui-Long, ed.  
*see* Porbaha, Ali, ed., 2072
- Shen, Y. M.  
*see* Zheng, Y. H., 1865
- Sheng, Daichao  
*see* Huang, Wenxiong, 45
- Shenton, Harry W., III  
Damage Identification Based on Dead Load Redistribution: Methodology, 1562
- see* Howell, Daniel A., 170
- see* Hu, Xiaofeng, 1563
- see* Johnston, Adrienne R., 1579
- Shepherd, W. J.  
*see* Grosskopf, K. R., 419
- Sheppard, D. Max  
Live-Bed Local Pier Scour Experiments, 995

- Sherif, Ahmed H.**  
*see El Sherbiny, Ahmed H.*, 729
- Sherman, Lee C.**  
*see Charbeneau, Randall J.*, 978
- Shi, H.**  
*see Aubeny, C. P.*, 848
- Shi, Jonathan J.**  
*see Lee, Dong-Eun*, 296
- Shi, Jonathan Jingsheng**  
*see Zhang, Hong*, 413
- Shi, Jun-Yang**  
*see Chen, Shi-Shuenn*, 838
- Shi, Qixin**  
*see Zheng, Weizhong*, 1675
- Shi, Xiaomin**  
*see Zhang, Yin*, 144
- Shi, Xing**  
Mechanics and Test Study of Two-Dimensional Flexible Membranes, 92
- Shi, Yu-E**  
*see Nguyen, Dan K.*, 958
- Shibata, Tomoyuki**  
*see Meeroff, Daniel E.*, 683
- Shieh, Chjeng-Lun**  
*see Tseng, Chih-Ming*, 1012
- Shield, Carol**  
*see Zhao, Jian*, 1584
- Shields, F. Douglas, Jr.**  
*see Chao, Xiao-bo*, 753
- Shih, Naai-Jung**  
3D Scan Information Management System for Construction Management, 301
- Shih, Pai-Haung**  
*see Chien, Yi-Chi*, 716
- Shillinglaw, Scott**  
*see MacDougall, Colin*, 135
- Shimada, Masashi**  
Time-Limit Interpolation Errors in Pipe Networks, 961
- Shimizu, Yoshihisa**  
Development of Real-Time Safety Control System for Urban Gas Supply Network, 801
- Shimotori, Tsutomu**  
High-Density Polyethylene Membrane Containing Fe<sup>2+</sup> as a Contaminant Barrier, 690
- Shin, Seungcheol**  
*see Elsworth, Derek*, 915
- Shin, Sungwon**  
*see Suh, Kyung-Duck*, 1863
- Shintani, Tetsuya**  
*see Umeyama, Motohiko*, 1901
- Shiramizu, Sharilyn**  
Influence of the National Performance Review on Supervisors in Government Organizations, 1920
- Shlemon, Edwin, P.E.**  
*see Zekioglu, Atilla, P.E.*, 2040
- Shoda, Daisuke**  
*see Kawabata, Toshinori*, 903
- Shodja, Hossein M.**  
Effective Moduli of Coated Particulate Composites with BCC Structure at High Concentration, 525  
*see Kamali, Mohammad T.*, 524
- Shoemaker, Leslie**  
*see Zou, Rui*, 644
- Shohet, Igal M.**  
Key Performance Indicators for Strategic Healthcare Facilities Maintenance, 322
- Shome, M. L.**  
Flood Plain Filling by a Monoclonal Flood Wave, 984
- Shoop, S.**  
Seasonal Deterioration of Unsurfaced Roads, 857
- Show, Kuan-Yeow**  
Thermochanical Analysis in the Presintering Phase of Aggregates from Sludge-Marine Clay Mixes, 1267
- Shrivastava, Prabhav**  
Operational Integration of Suburban Railway and Public Buses — Case Study of Mumbai, 1718
- Shrivastava, R. K.**  
*see Gupta, Ajay Kumar*, 744
- Shrope, Stephen J., P.E.**  
*see Moyano, David C., P.E.*, 1996
- Shubov, Marianna A.**  
Flutter Phenomenon in Aeroelasticity and its Mathematical Analysis, 58
- Shushkewich, Kenneth W., P.E.**  
Transverse Analysis of Strutted Box Girder Bridges, 107
- Shuster, Laurie A.**  
Inventive Maintenance, 2017
- Shuy, E. B.**  
*see Chua, Lloyd H. C.*, 511
- Shyu, C. T.**  
*see Wight, R. G.*, 151
- Shyy, Wei**  
*see Singh, Rajkeshar*, 84
- Siddheshwar, Pradeep G.**  
*see Chan, Andy T.*, 444
- Siegwart, Michael**  
Influence of Electrochemical Chloride Extraction on the Performance of Prestressed Concrete under Dynamic Loading Conditions, 1355
- Siem, Jan**  
*see Meløysund, Vivian*, 1618
- Silva, Manuel A. G.**  
Size and Relative Stiffness Effects on Compressive Failure of Concrete Columns Wrapped with Glass FRP, 1297
- Silvadasan, X.**  
*see Kura, B.*, 768

## AUTHOR INDEX

Skolicki

- Silvestre, Nuno  
Local-Plate and Distortional Postbuckling Behavior of Cold-Formed Steel Lipped Channel Columns with Intermediated Stiffeners, 1491
- Simon, Michelle A., P.E.  
Method for Measuring Air-Immiscible Liquid Partition Coefficients, 599
- Simons, Roland  
*see* Rowlinson, Steve, 1414
- Simpson, Angus  
*see* Vítkovský, John, 1001
- Simpson, Angus R.  
*see* Vítkovský, John P., 1000
- Sinfield, Joseph V.  
*see* Santagata, Marika, 810
- Singh, A. K.  
Design of a Rigid Cutoff Wall, 34
- Singh, Amarjit  
*see* Shiramizu, Sharlyn, 1920
- Singh, D.  
Contractor Selection Criteria: Investigation of Opinions of Singapore Construction Practitioners, 387
- Singh, K. S.  
*see* Tai, C. S., 669
- Singh, Kripa Shankar  
Sludge Blanket Height and Flow Pattern in UASB Reactors: Temperature Effects, 699
- Singh, M. P.  
Seismic Design Forces. I: Rigid Nonstructural Components, 1589
- Seismic Design Forces. II: Flexible Nonstructural Components, 1590
- Singh, R.  
*see* Raghuwanshi, N. S., 1078
- Singh, Raj Mohan  
Identification of Groundwater Pollution Sources using GA-Based Linked Simulation Optimization Model, 1081
- Singh, Rajendra  
*see* Sahoo, Bhabagahi, 1124
- Singh, Rajkeshar  
Multiphase/Multidomain Computations using Continuum and Lattice — Boltzmann Methods, 84
- Singh, Shikha  
A Review of Wind-Resource-Assessment Technology, 420
- Singh, Sushil K.  
Diagnostic Curve for Estimating Soil Dispervisity and Instantaneously Injected Mass, 1194
- Flow Depletion Induced by Pumping Well from Finite Length of Stream, 1222
- Flow Depletion of Semipervious Streams Due to Unsteady Pumping Discharge, 1209
- Optimal Instantaneous Unit Hydrograph from Multiform Data, 1198
- Simplified Kernel Method for Flow to Large Diameter Wells, 1173
- Singh, V. P.  
*see* Jain, M. K., 1136
- see* Jain, Sharad K., 1134
- see* Zhang, L., 1086
- Singh, Vijay P.  
Hydrologic Modeling Inventory: Cooperative Research Effort, 1175
- see* Tayfur, Gokmen, 1064
- Singha, Maloy K.  
Nonlinear Response of Laminated Cylindrical Shell Panels Subjected to Thermomechanical Loads, 548
- Sinha, Braj  
*see* Pedreschi, Remo, 1308
- Sinha, Sunil K.  
*see* Thomas, H. Randolph, 1989
- Sinn, Robert, P.E.  
*see* Iyengar, Hal, P.E., 2000
- Sinn, Robert C.  
*see* Kijewski-Correa, Tracy, 1588
- Sinnakaudan, S. K.  
Multiple Linear Regression Model for Total Bed Material Load Prediction, 983
- Siriya, Praveen  
*see* Elmarakbi, Ahmed, 1743
- Sisiopiku, Virginia P.  
Technology Evaluation of Hydrogen Light-Duty Vehicles, 663
- Sitar, Nicholas  
*see* Nova-Roessig, Lili, P.E., 813
- Sivacoumar, R.  
Particulate Matter from Stone Crushing Industry: Size Distribution and Health Effects, 628
- Sivaselvan, Mettupalayam V.  
Lagrangian Approach to Structural Collapse Simulation, 516
- Sixto, E.  
*see* Puertas, J., 1069
- Skerlj, Peter F.  
*see* Vickery, Peter J., 1930
- see* Vickery, Peter J., 1931
- Skibniewski, Miroslaw J.  
*see* Castro-Lacouture, Daniel, 248
- see* Nititharmyong, Pollaphat, 295
- Skinner, Graeme D.  
*see* Kennedy, Matthew J., 48
- Skipper, Charles O.  
Influences Impacting Leadership Development, 1245
- Skipper, Charles O., P.E.  
Assessment with 360° Evaluations of Leadership Behavior in Construction Project Managers, 1246
- Skitmore, Martin  
*see* Drew, Derek S., 330
- Skolicki, Zbigniew  
Reduction of Physical Threats to Water Distribution Systems, 1822

- Skutezky, Trevor  
*see* Fam, Amir, 205
- Slagle, James H.  
*see* U, José Terán, 1994
- Slattery, Dianne Kay  
Case Study of Factors Affecting Urban Residential Construction in St. Louis, 1786
- Slavsky, Eugene  
*see* Sanayci, Masoud, 172
- Sleep, Brent E.  
*see* Béranger, Sandra C., 681
- Slutzman, Jonathan E.  
Effects of Flood Control Structures on Flood Response for Hurricane Floyd in the Brandywine Creek Watershed, Pennsylvania, 1115
- Smilowitz, Robert, P.E.  
*see* Ettouney, Mohammed, P.E., 1406
- Smith, Brian L., ed.  
*see* Wang, Kelvin C., ed., 2049
- Smith, D. W.  
*see* Fletcher, H. R., 608
- Smith, David  
*see* Huang, Wenxiong, 45
- Smith, Gary R., P.E.  
*see* Hegab, Mohamed, P.E., 347
- Smith, Ian F. C.  
*see* Shea, Kristina, 1518
- Smith, J. A.  
*see* Burns, S. E., 907
- Smith, J. T.  
*see* Hunt, W. F., 1232
- Smith, Jia, Z., 1182
- Smith, James A.  
*see* Bartelt-Hunt, Shannon L., 686
- Smith, Slutzman, Jonathan E., 1115
- Smith, L. C.  
*see* Cai, Hubo, 1646
- Smith, Roger E.  
*see* Woolhiser, David A., 1083
- Smith, Simon D.  
*see* Carter, Gregory, 308
- Smith, Stephen R.  
*see* Campos, Luiza C., 697
- Smith, Tony E.  
*see* Casello, Jeffrey M., 1800
- Smith, Winter  
*see* Lange, Clifford R., 645
- Smith-Pardo, J. Paul  
Distribution of Compressive Stresses in Transversely Posttensioned Concrete Bridge Decks, 110
- Smout, I. K.  
Productivity and Equity of Different Irrigation Schedules under Limited Water Supply, 1203
- Smout, Ian K.  
Performance-Based Optimization of Land and Water Resources within Irrigation Schemes. II: Application, 1202  
*see* Gorantiwar, Sunil D., 1201
- Smyth, Andrew W.  
Energy Capacity Criterion for the Design of Columns against Collapse, 493  
*see* Pei, Jin-Song, 571
- Smyth, Hedley J.  
*see* Edkins, Andrew J., 1415
- Snaith, Martin S.  
*see* Ortiz-García, José J., 1678
- Snow, Daniel  
*see* Adam, Michael, 763
- Snow, Daniel D.  
*see* Young, Travis S. M., 1949
- Snyder, Richard  
*see* Consoli, Simona, 1164
- Snyder, Richard L.  
*see* Ventura, Francesca, 1181
- Soares, E. P.  
*see* Mendonça, A. A., 1276
- Sobotka, Anna  
*see* Jaškowski, Piotr, 374
- Soetanto, R.  
Empirical Evaluation of Structural Frame Performance Criteria: Realizing the Potential of Hybrid Concrete Construction, 316
- Soh, C. K.  
*see* Naidu, A. S. K., 267
- Soh, Chee Kiong  
*see* Yang, Yaowen, 66
- Soibelman, L.  
*see* Ng, H. S., 1142
- Soibelman, Lucio  
*see* Brilakis, Ioannis, 365
- Solari, Giovanni  
*see* Repetto, Maria Pia, 1528
- Solomon, J.  
*see* Salem, O., 1256
- Soltani, Ali  
Analyzing the Impacts of Microscale Urban Attributes on Travel: Evidence from Suburban Adelaide, Australia, 1787
- Son, Bosik  
*see* Nepal, Madhav Prasad, 306
- Song, Inhong  
Comparison of Crop Contamination by Microorganisms during Subsurface Drip and Furrow Irrigation, 725
- Song, Jongchul  
Tracking the Location of Materials on Construction Job Sites, 378

## AUTHOR INDEX

Staudinger

- Song, Junho**  
Generalized Bouc - Wen Model for Highly Asymmetric Hysteresis, 495
- Joint First-Passage Probability and Reliability of Systems under Stochastic Excitation**, 441
- Song, Lingguang**  
Virtual Shop Model for Experimental Planning of Steel Fabrication Projects, 281
- Song, Seong Hyeok**  
Simulation of Crack Propagation in Asphalt Concrete using an Intrinsic Cohesive Zone Model, 563  
*see* Buttler, William G., 459
- Song, Weon-Kyun**  
Thermal Transfer Analysis of a Freezing Soil Medium with an Embedded Pipeline, 181
- Song, Yuanbin**  
Modeling of Functional Construction Requirements for Constructability Analysis, 418
- Sonnad, Jagadeesh R.**  
Turbulent Flow Friction Factor Calculation using a Mathematically Exact Alternative to the Colebrook — White Equation, 1017
- Sopian, K.**  
*see* Othman, M. Y., 433  
*see* Othman, M. Y., 434
- Sorenson, Kent S., Jr., P.E.**  
*see* Dettmers, Dana L., 1952
- Sotelineo, Elisa D.**  
*see* Chung, Wonseok, 122
- Soudki, K.**  
*see* Al-Mayah, A., 1358
- Soudki, K. A.**  
*see* Harajli, M. H., 229
- Soudki, Khaled**  
*see* El Maaddawy, Tamer, 202
- Soudki, Khaled A.**  
*see* Chahrour, Ali H., 211
- see* Sharaf, Mohamed H., 230
- Soulis, E. D.**  
*see* Bingeman, A. K., 1117
- Sparks, Richard E.**  
*see* Nedović-Budić, Zorica, 1795
- Spaulding, Malcolm, P.E., ed.**  
Estuarine and Coastal Modeling — Proceedings of the Ninth International Conference, 2064
- Spencer, B. F., Jr.**  
*see* Christenson, Richard E., 462  
*see* Christenson, Richard E., 1524
- Spengler, Steven**  
*see* Babcock, Roger, Jr., 696
- Sperling, V.**  
*see* Makinia, J., 636
- Spielholz, Peregrin**  
Physical Risk Factors and Controls for Musculoskeletal Disorders in Construction Trades, 393
- Spiller, Martin**  
*see* Rubin, Hillel, 589
- Spinelli, Davide**  
*see* Paolucci, Roberto, 455
- Sputo, Thomas, P.E.**  
*see* Green, Perry S., 1493
- Sridhar, V.**  
Assessment of Soil Moisture Dynamics of the Nebraska Sandhills using Long-Term Measurements and a Hydrology Model, 1216
- Sridharan, T.**  
*see* Maheswari, J. Uma, 336
- Srikanthan, R.**  
Comparison of Two Nonparametric Alternatives for Stochastic Generation of Monthly Rainfall, 1094
- Srinivas, S.**  
Multivariate Simulation and Multimodal Dependence Modeling of Vehicle Axle Weights with Copulas, 1767
- Srinivas, Y.**  
Large-Eddy Simulation of High Reynolds Number Turbulent Flow Past a Square Cylinder, 468
- Srinivasan, K.**  
*see* Yandamuri, S. R. Murty, 1814
- Sriram, Anant**  
*see* Anand, Gunwant Singh, 634
- Sripatharan, Sri**  
*see* Suleiman, Muhamad T., 1611
- Srivastava, Rajesh**  
Aquifer Diffusivity Estimation from Response to Stream Stage Variation, 1100
- Strou, Issam M.**  
Linear Programming Approach to Optimize Strategic Investment in the Construction Workforce, 402
- What Does the Construction Industry Value in its Workers?, 392
- Stalnaker, Judith J., P.E.**  
*see* Marxhausen, Peter D., P.E., 1514
- Standen, E.**  
Ice Stresses in Reservoirs: Effect of Water Level Fluctuations, 183
- Standen, Ed**  
*see* Morse, Brian, 184  
*see* Morse, Brian, 185
- Standridge, Jon H.**  
*see* Xagorarakis, Irene, 692
- Stansby, Peter K.**  
Limitations of Depth-Averaged Modeling for Shallow Lakes, 1004
- Stanton, John F.**  
*see* Hoehler, Matthew S., 1542
- Starkova, O. A.**  
*see* Aiello, M. A., 1340
- Staudinger, Tiffany J.**  
Comparative Analysis of Water Vulnerability Assessment Methodologies, 1146

- Steenhuis, Tammo S.**  
*see* Collick, Amy S., 731
- Stefan, Heinz G.**  
*see* Williams, Sterling Greg, 187
- Steffer, P. M.**  
*see* Edwini-Bonsu, S., 1008  
*see* Edwini-Bonsu, S., 1009  
*see* Shome, M. L., 984
- Steinemann, Anne C.**  
Developing Multiple Indicators and Triggers for Drought Plans, 1817
- Steiner, R.**  
*see* McShannon, J., 1424
- Stenstrom, Michael K.**  
*see* Khan, Sabbir, 629  
*see* Kim, Lee-Hyung, 711  
*see* Li, Yingxia, 695
- Stephanedes, Yorgos J.**  
*see* Tzamali, Eleftheria, 1755
- Stephens, Mark**  
*see* Vítkovský, John, 1001
- Stern, Jennifer**  
*see* Abichou, Tarek, 607
- Stevens, David K.**  
*see* Chen, Shyi-Tien, 678
- Stewart, J. P.**  
*see* Moss, R. E. S., 873
- Stewart, Jonathan P.**  
*see* Chu, Daniel B., 922
- Stewart, Mark G.**  
Terrorism Risks and Blast Damage to Built Infrastructure, 1933
- Stiassnie, Michael**  
Prediction of Long Forcing Waves for Harbor Agitation Studies, 1871
- Stiemer, Siegfried**  
*see* Varoglu, Erol, 1578
- Stiller, William B., P.E.**  
Testing, Analysis, and Evaluation of a GFRP Deck on Steel Girders, 142
- Stine, Scott W.**  
*see* Song, Inhong, 725
- Stockstill, Richard L.**  
*see* Tate, Jennifer N., 1015
- Stoeckenius, T.**  
*see* Eisinger, D. S., 1756
- Stoecker, Arthur L.**  
*see* Ancev, Tihomir, 1208
- Stojadinovic, B.**  
*see* Mackie, K. R., 1564
- Stojadinovic, Bozidar**  
Event-Driven Control System for Geographically Distributed Hybrid Simulation, 1446
- Stokoe, Kenneth H., II**  
*see* Zekkos, Dimitrios, 893
- Stone, Michael**  
*see* Vijayaraghavan, Krishna, 680
- Stopar, Bojan**  
*see* Savšek-Safic, Simona, 1648
- Stoschek, Oliver**  
Water Exchange and Sedimentation in an Estuarine Tidal Harbor using Three-Dimensional Simulation, 1893
- Stothoff, Stuart A.**  
*see* Woolhiser, David A., 1083
- Strand, R. J.**  
*see* Bautista, E., 1180
- Street, Robert L.**  
*see* Zedler, Emily A., 950
- Stroup-Gardiner, Mary**  
*see* Lange, Clifford R., 645
- Struble, Leslie J.**  
*see* Cardenas, Henry E., 1323
- Struck, Scott D., ed.**  
*see* Field, Richard, ed., 2052
- Stubbs, Dale R., P.E.**  
*see* Masters, Kathryn, P.E., 2028
- Stubbs, Norris**  
*see* Park, Sooyong, 1520
- Stuckey, David C.**  
*see* Hu, Alan Y., 604
- Sture, Stein**  
*see* Xi, Yunping, 561
- Sturm, Terry W.**  
Scour around Bankline and Setback Abutments in Compound Channels, 933
- Styles, Richard**  
Application of a Bottom Boundary Layer Model in Contrasting Wave and Current Environments: Grays Harbor, Washington, 1890
- Su, Chengyi**  
*see* Zhou, Ping, 597
- Su, H.**  
*see* Banerjee, J. R., 59
- Su, Huaizhī**  
*see* Dai, Huichao, 349
- Su, Y. Y.**  
Integration of Construction As-Built Data via Laser Scanning with Geotechnical Monitoring of Urban Excavation, 410
- Suárez, J.**  
*see* Jácome, A., 727
- Suarez, Jorge**  
Polyethylene Duct Cracking on Posttensioning Tendons in Florida Segmented Bridges, 1327
- Suárez, L. E.**  
*see* Singh, M. P., 1589  
*see* Singh, M. P., 1590
- Suarez, Monica P.**  
Dioxin in Storm-Water Runoff in Houston, Texas, 770

## AUTHOR INDEX

Sylvie

- Subbarao, Chillara**  
*see* Ghosh, Ambarish, 1263  
*see* Ghosh, Ambarish, 1273
- Subramaniam, Kolluru**  
*see* Ali-Ahmad, Mohamad, 530
- Suen, Henry C. H.**  
*see* Chan, Edwin H. W., 332
- Suetomi, Iwao**  
*see* Shimizu, Yoshihisa, 801
- Sugano, Takahiro**  
*see* Ashford, Scott A., 793
- Suh, Kyung-Duck**  
 Hydrodynamic Characteristics of Pile-Supported Vertical Wall Breakwaters, 1863
- Suh, Wonho**  
 Relationship between Speed, Lateral Placement, and Drivers' Eye Movement at Two-Lane Rural Highways, 1734
- Suidan, Makram T.**  
*see* Boufadel, Michel C., 668
- Lei, Li, 626**  
*see* Qi, Shuang, 594
- Rivero, Jesús A. Cacho, 670**
- Suita, Keiichiro**  
*see* Inoue, Kazuo, 1525  
*see* Okazaki, Taichiro, 1557
- Sukumaran, Praveen**  
 Model for Analysis of Factors Affecting Construction Schedule in Highway Work Zones, 1717
- Validation of a Model for Predicting Schedule Changes in Highway Work Zones — Case Studies, 1733
- Suleiman, Muhammad T.**  
 Cyclic Lateral Load Response of Bridge Column-Foundation-Soil Systems in Freezing Conditions, 1611
- Load Transfer in Rammed Aggregate Piers, 51
- Sullivan, Bart, P.E.**  
 Starting Over, 2035
- Sullivan, David**  
*see* Beltaos, Spyros, 1056
- Sullivan, Edward, P.E.**  
 Benefit-Cost Analysis of Variable Pricing Projects: SR-91 Express Lanes, 1683
- see* Burris, Mark, P.E., 1682
- Sumer, Ali**  
*see* Fleischman, Robert B., 1510
- Sumer, B. M.**  
*see* Damgaard, J. S., 1883
- Sumer, B. Muthu**  
 Critical Flotation Density of Pipelines in Soils Liquefied by Waves and Density of Liquefied Soils, 1879
- Liquefaction around Pipelines under Waves, 1880
- see* Dey, Subhasish, 959
- Sun, Kuo-Shun**  
*see* Huang, Rong-yau, 346
- Sun, Lu**  
 Stochastic Spatial Excitation Induced by a Distributed Contact on Homogenous Gaussian Random Fields, 505
- Sun, Shuang-Ke**  
*see* Zhao, Can-Hua, 937
- Sun, Xin**  
*see* Garber, Nicholas J., 1665
- Sundararajan, N.**  
*see* Ganapathi, M., 528
- Surampalli, R. Y.**  
*see* Brar, Satinder K., 1946  
*see* Verma, M., 1969
- Surampalli, Rao Y., ed.**  
*see* Irene, M. C. Lo, ed., 2097
- Surjadinata, J.**  
 Combined Finite- and Boundary-Element Analysis of the Effects of Tunneling on Single Piles, 49
- Sutherland, P. Lorenz**  
*see* Wittler, James M., 1213
- Suthiwarpik, Peerapong**  
 Fatigue Analysis of RC Slabs and Repaired RC Slabs Based on Crack Bridging Degradation Concept, 1532
- Suwito**  
*see* Xi, Yunping, 561
- Suzuki, Kiichi**  
 Double Strain Softening and Diagonally Crossing Shear Bands of Sand in Drained Triaxial Tests, 57
- Principal Deviatoric Strain Increment Ratios for Sand having Inherent Transverse Isotropy, 47
- Suzuki, Takanobu**  
*see* Shimizu, Yoshihisa, 801
- Svecova, Dagmar**  
*see* Hay, Shaun, 237
- Mota, Carlos, 206**
- Steinsson, O. G.**  
*see* Salas, J. D., 1177
- Swinkin, Mark R.**  
 Minimizing Construction Vibration Effects, 11
- Mitigation of Soil Movements from Pile Driving, 1977
- Swanson, J.**  
*see* Salem, O., 1980
- Swanson, James A.**  
*see* Kayser, Caroline R., 114
- Swarnalatha, S.**  
*see* Sivacoumar, R., 628
- Syal, M.**  
*see* Banerjee, D., 103
- Syal, Matt**  
*see* Jeong, Jae G., 1771  
*see* Jeong, Jae G., 1797
- Sylvie, Jonathan R.**  
*see* Mathews, Benjamin, 1259

- Symmes, Arthur H., P.E.  
*see* Lakota, Gregory J., P.E., 2037
- Szajman, Alberto  
*see* Chinowsky, Paul S., 1416
- Szilagyi, Jozsef  
Hybrid, Markov Chain-Based Model for Daily Streamflow Generation at Multiple Catchment Sites, 1097
- Szydlo, A.  
*see* Kruszyna, M., 1757
- Tabak, Henry H.  
*see* Lei, Li, 626
- Tabernerio, Vener  
Upstream Signalized Crossover Intersection: An Unconventional Intersection Scheme, 1763
- Tabsh, Sami W.  
Simplified Structural Analysis of Retaining Walls on Stepped Footings, 1973
- Tachiri, Kaoru  
*see* Watanabe, Kohei, 1781
- Taciroglu, Ertugrul  
A Robust Macroelement Model for Soil — Pile Interaction under Cyclic Loads, 898
- Tadepalli, Naveen  
*see* Durango-Cohen, Pablo L., 1669
- Taeerwe, L.  
*see* Matthys, S., 1450
- Tafuri, Anthony N., ed.  
*see* Field, Richard, ed., 2052
- Taghavi, Shahram  
*see* Miranda, Eduardo, 6
- Taguchi, Koichi  
*see* Azam, Mir Hammadul, 1891  
*see* Elshorbagy, Walid, 1859
- Tai, C. S.  
Combined Removal of Carbon and Nitrogen in an Integrated UASB-Jet Loop Reactor Bioreactor System, 669
- Tai, Cheng-Feng  
*see* Singh, Rajkeshar, 84
- Tajima, Yoshimitsu  
Modeling Near-Shore Waves, Surface Rollers, and Undertow Velocity Profiles, 1896
- Takahashi, Naoki  
Online Earthquake Response Test for Stratified Layers of Clay and Sand, 834
- Takeuchi, Ichiro  
*see* Inoue, Kazuo, 1525
- Takewaki, Izuru  
Probabilistic Critical Excitation Method for Earthquake Energy Input Rate, 538
- Täjsten, Björn  
*see* Nordin, Håkan, 194
- Talley, Jeffrey W.  
*see* Pirnie, Erica F., 662
- Talley, Jeffrey W., P.E.  
*see* Ruggaber, Timothy P., 1947
- Talwani, Pradeep  
*see* Leon, Evangelia, 811
- Tam, C. M.  
*see* Zhang, Hong, 259  
*see* Zhang, Hong, 314  
*see* Zhang, Hong, 413
- Tamura, Keiichi  
*see* Okamura, Mitsu, 803
- Tan, K. H.  
Size Effect on Shear Strength of Deep Beams: Investigating with Strut-and-Tie Model, 1507
- Tan, Kiang Hwee  
Long-Term Deflections of Reinforced Concrete Beams Externally Bonded with FRP System, 236
- Tan, Soon-Keat  
*see* Yu, Guoliang, 1183  
*see* Yu, Guoliang, 1220
- Tan, V. B. C.  
*see* Zhang, Y. Y., 534
- Tan, Z.  
*see* Seracino, R., 1460
- Tan, Zenyu  
*see* Zhou, Guoqing, 1782
- Tanaka, Hitoshi  
*see* Sana, Ahmad, 1040
- Tandoi, Valter  
*see* Louarn, Essylt, 705
- Tandon, Vivek  
Impact of Specimen Geometry on Dynamic Modulus Measurement Test Setup, 1314
- Tandukar, Madan  
Potential of a Combination of UASB and DHS Reactor as a Novel Sewage Treatment System for Developing Countries: Long-Term Evaluation, 601
- Tang, C. M.  
Entropy Application to Improve Construction Finance Decisions, 397
- Tang, Hongxiao  
*see* Wang, Dongsheng, 647
- Tang, Man-Chung, P.E.  
Extending the Possibilities, 2034
- Sun, Moon, and Stars, 2006
- Tang, Margaret  
*see* Ettouney, Mohammed, P.E., 1406
- Tang, W. H.  
*see* Zhang, L. M., 835
- Tang, Wenzhe  
Partnering Mechanism in Construction: An Empirical Study on the Chinese Construction Industry, 310
- Tang, Xiaonan  
Sediment Transport in River Models with Overbank Flows, 939

## AUTHOR INDEX

Theriault

- Tanovic, R.  
*see* Wight, R. G., 151
- Tape, William D.  
*see* da Silva, Ana Maria Ferreira, 1031
- Tapia, Josefina  
*see* Pacheco, Sadott, 621
- Tariku, Fitsum  
*see* Mukhopadhyaya, Phalguni, 101
- Tas, Didem Okutman  
*see* Cokgor, Emine Ubay, 590
- Tastani, S. P.  
Bond of GFRP Bars in Concrete: Experimental Study and Analytical Interpretation, 227
- Limitations of FRP Jacking in Confining Old-Type Reinforced Concrete Members in Axial Compression, 190
- Tate, Eric  
*see* Scawthorn, Charles, 1928
- Tate, Jennifer N.  
Refinement Indicator for Mesh Adaption in Shallow-Water Modeling, 1015
- Tateishi, Yoshitaka  
*see* Hong, Zhenshun, 833
- Tatum, C. B.  
Innovations in Earthmoving Equipment: New Forms and Their Evolution, 386
- Tatum, C. B., P.E.  
Systems Analysis of Technical Advancement in Earthmoving Equipment, 385
- see* Korman, Thomas M., P.E., 249
- Tawfiq, Kamal  
*see* Abichou, Tarek, 919
- see* Haroon, Saif, 159
- Taxon, Tom  
*see* Janke, Robert, 1834
- Tay, Joo-Hwa  
*see* Show, Kuan-Yeow, 1267
- Tayfun, M. Aziz  
Distributions of Wave Steepness and Surf Parameter, 1855
- Tayfur, Gokmen  
ANN and Fuzzy Logic Models for Simulating Event-Based Rainfall-Runoff, 1064
- Taylor, Craig  
Hedgehog and Fox Strategies for Reducing Risks in Infrastructure Systems, 1935
- Taylor, Scott, P.E.  
Start at the Source, 2001
- Tchiftchibachian, A.  
*see* Pascal, M., 1168
- Tee, K. F.  
*see* Koh, C. G., 1638
- Teel, Amy L.  
*see* Watts, Richard J., 1939
- Teh, T. C.  
Stability of Submarine Pipelines on Liquefied Seabeds, 1878
- see* Damgaard, J. S., 1883
- see* de Groot, M. B., 1877
- Teixeira, E. C.  
*see* Khan, Liaquat A., 1005
- Tejero, I.  
*see* Jäcome, A., 727
- Telem, Dory  
Moving a Reinforced-Concrete Building: Case Study, 299
- Only Dynamics Can Absorb Dynamics, 403
- Templeton, J. S., ed.  
Offshore Technology in Civil Engineering: Hall of Fame Papers from the Early Years, 2077
- Teng, J. G.  
Behavior and Modeling of Fiber Reinforced Polymer-Confining Concrete, 9
- Debonding Failures of RC Beams Strengthened with Near Surface Mounted CFRP Strips, 198
- see* Yu, T., 233
- Teng, Junn-Yuan  
Multiobjective Strategic Evaluation for Urban Development in Kaohsiung, Taiwan: Case Study, 1791
- Terashima, Tomohiko  
*see* Azam, Mir Hammadul, 1891
- Terro, M.  
*see* Almutairi, Naif B., 500
- Terry, Philip, P.E.  
Security Barrier Design, 1981
- Terzi, Özlem  
*see* Keskin, M. Erol, 1077
- Teskey, W. F.  
Determining Free Flight Performance by Surveying Engineering Techniques, 1653
- Teskey, W. J.  
*see* Teskey, W. F., 1653
- Teughels, Anne  
*see* Unger, Jörg F., 1606
- Thakkar, Bhairav K.  
Damage-Coupled Progressive Failure and Yield Line Analyses of Metal Plates, 483
- Tham, L. G.  
*see* Pradhan, B., 36
- see* Yang, J., 779
- Thang, Le Chien  
*see* Ogunkana, Stephen, 1247
- Thanh-Quach, Tung  
*see* Morse, Brian, 184
- see* Morse, Brian, 185
- Thephchatr, Thaksin  
*see* Lenwari, Akhrawat, 195
- Theriault, Brian M.  
*see* Ergas, Sarina J., 618

- Thet, Y.**  
*see* Abuel-Naga, H. M., 862
- Thévenin-Foray, Geneviève**  
*see* Poyet, Stéphane, 1328
- Thiessen, Kenton**  
*see* Hay, Shaun, 237
- Tholen, Michael, P.E.**  
*see* Terry, Philip, P.E., 1981
- Thom, Nicholas H.**  
*see* Kruntcheva, Mariana R., 1312
- Thomas, Fridtjof**  
*see* Onar, Arzu, 1748
- Thomas, H. Randolph**  
Fundamental Principles for Avoiding Congested Work Areas — A Case Study, 1989
- Fundamental Principles of Workforce Management, 297
- Thomas, Stephen R.**  
*see* Matthews, Benjamin, 1259
- Thomas, W. H.**  
Empirical Punching Shear Failure Theory for Oriented Strand Boards: Preliminary Study, 1487
- Thomas, Will**  
*see* Scawthorn, Charles, 1928
- see* Scawthorn, Charles, 1929
- Thompson, David B.**  
*see* Cleveland, Theodore G., 1218
- Thompson, Marshall R., P.E.**  
*see* Gopalakrishnan, Kasthurirangan, 1761
- Thompson, Michel D.**  
Reliability-Based Optimization of Fiber-Reinforced Polymer Composite Bridge Deck Panels, 1626
- Thompson, Robert W.**  
*see* Pyzocha, Michael J., 703
- Thompson, T. L.**  
*see* Lazarovitch, N., 1225
- Thomson, P. R.**  
*see* Wong, R. C. K., 904
- Thornton, E. C.**  
Development of a Field Design for In Situ Gaseous Treatment of Sediment Based on Laboratory Column Test Data, 769
- Thu, Trinh Minh**  
Shear Strength and Pore-Water Pressure Characteristics during Constant Water Content Triaxial Tests, 815
- Thuman, Andrew J., P.E.**  
Jackson River Modeling: 50-Year Perspective, 719
- Thurston, Hale W.**  
Opportunity Costs of Residential Best Management Practices for Stormwater Runoff Control, 1810
- Tia, M.**  
*see* Kumara, M. W., 1749
- Tian, Xiaodong**  
Marine Wastewater Discharges from Multiport Diffusers. IV: Stratified Flowing Water, 972
- Tian, Zong Z.**  
Probabilistic Model for Signalized Intersection Capacity with a Short Right-Turn Lane, 1685
- Tiberio, Terrence J., P.E.**  
Placed in Context, 2026
- Tieleman, Henry W.**  
Peak Wind Load Comparison: Theoretical Estimates and ASCE 7, 1551
- Tien, Yong-Ming**  
*see* Chen, Liang-Chien, 1651
- Tierney, M. J.**  
Removal of Toluene Vapor with Dispersed Activated Carbon, 622
- Tikalsky, Paul, P.E.**  
*see* Deng, An, 665
- Tikkka, Timo K.**  
Nonlinear EI Equation for Slender Composite Columns Bending about the Minor Axis, 1596
- Nonlinear Equation for Flexural Stiffness of Slender Composite Columns in Major Axis Bending, 1477
- Tiller, Dale K.**  
*see* Bunz, Kimberly R., 88
- Tilley, Chris**  
*see* Cai, Hubo, 1646
- Timmermans, Harry**  
*see* Zhu, Wei, 1792
- Ting, Wen-Huei**  
Enhancement of Denitrification in Upflow Sludge Bed Reactors with Sludge Wasting, 635
- Ting, W.-P.**  
*see* Lu, M.-C., 1965
- Tingle, Jeb S., P.E.**  
*see* Rushing, John F., 1394
- Tingsanchali, Tawatchai**  
Stochastic Dynamic Programming with Risk Consideration for Transbasin Diversion System, 1812
- Tiong, Robert L. K.**  
*see* Singh, D., 387
- Tjhin, T.**  
Observations on the Reliability of Alternative Multiple-Mode Pushover Analysis Methods, 1485
- Tlemat, H.**  
*see* Neocleous, K., 1339
- Toback, A.**  
*see* Serrette, R., 1497
- Tobiason, John E.**  
*see* Kennedy, Matthew G., 710
- Tobita, Tetsuo**  
Rotation Response of a Rigid Body under Seismic Excitation, 472
- Todisco, Francesca**  
*see* Mannocchi, Francesco, 1179
- Tokay, T. E.**  
Validation of a Large-Eddy Simulation Model to Simulate Flow in Pump Intakes of Realistic Geometry, 1062

## AUTHOR INDEX

Tuncay

- Tokimatsu, Kohji**  
*see* Cetin, K. Onder, 10
- Tonon, Fulvio**  
Interaction Diagram and Load Effects for Vertical Pile Groups with Application to the AASHTO LRFD, 1484
- see Mammino, Armando**, 105
- Tonon, Luigi**  
*see* Mammino, Armando, 105
- Torrent, David Grau**  
*see* Caldas, Carlos H., 361
- Torrenti, Jean-Michel**  
*see* Poyet, Stéphane, 1328
- Torres, Helen**  
*see* Post, Carol, P.E., 2021
- Torres, Ronald**  
*see* Perera, Ricardo, 1586
- Toukourou, A.**  
*see* Ng, H. S., 1142
- Touran, Ali**  
Modeling Cost Escalation in Large Infrastructure Projects, 373
- Tournier-Cognon, Hélène**  
*see* Poyet, Stéphane, 1328
- Toutanji, H.**  
*see* Matthys, S., 1450
- Toutanji, Houssam**  
Cyclic Behavior of RC Beams Strengthened with Carbon Fiber Sheets Bonded by Inorganic Matrix, 1264
- Toutanji, Houssam, P.E.**  
Verification of Design Equations of Beams Externally Strengthened with FRP Composites, 213
- Toutanji, Houssam A., P.E.**  
Moondust and More, 2010
- Toutlemonde, François**  
*see* Multon, Stéphane, 1317
- Towhata, Ikuo**  
*see* Shimizu, Yoshihisa, 801
- Townsend, Tim**  
*see* McLean, Amanda, 1945
- Townsend, Timothy G., P.E.**  
*see* Jain, Pradeep, 671
- Tralli, Antonio**  
*see* Milani, Gabriele, 1602
- Trauth, Kathleen M.**  
*see* Wang, Hao, 1783
- Travaglia, Andrera M.**  
Considering Location, Compliance, and Storage in Decisions on Brackish Water Resource Development, 1853
- Trejo, David**  
*see* Reinschmidt, Kenneth, 363
- Tremblay, Armand, P.E., ed.**  
*see* Atalah, Alan, P.E., ed., 2080
- Tremblay, Robert**  
Collapse during Construction of a Precast Girder Bridge, 1375
- Tricaud, Etienne**  
Above it All, 2042
- Trikha, D. N.**  
*see* Pandey, A. K., 1576
- Tripp, G. A.**  
*see* Richardson, C. P., 592
- Trivedi, M.**  
*see* Hong, H. P., 1155
- Truelsen, Christoffer**  
*see* Sumar, B. Mutlu, 1880
- Tsai, C. C.**  
Method of Fundamental Solutions for Three-Dimensional Stokes Flow in Exterior Field, 467
- Tsai, W. Y.**  
*see* Chang, C. C., 1661
- Tsai, Yuan-Fan**  
Three-Dimensional Topography of Debris-Flow Fan, 962
- Tsai, Yung-Pin**  
Effect of Cd(II) on Different Bacterial Species Present in a Single Sludge Activated Sludge Process for Carbon and Nutrient Removal, 602
- Tsamopoulos, Dimitrios A.**  
Assessing Performance under Regulatory Evolution: A European Transit System Perspective, 1798
- Tsang, Daniel C. W.**  
Influence of Pore-Water Velocity on Transport Behavior of Cadmium: Equilibrium versus Nonequilibrium, 1958
- Tschantz, Bruce, P.E.**  
*see* Hedrick, Kevin P., 1129
- Tse, C. M.**  
Deflection of the Vertical Components from GPS and Precise Leveling Measurements in Hong Kong, 1654
- Tseng, Chih-Ming**  
Formation Processes and Configuration of Channel-Flow Dominated Alluvial Deltas by Numerical Simulation, 1012
- Tserng, H. P.**  
*see* Fan, Su-Ling, 291
- Tsiatas, G.**  
*see* Bradshaw, A. S., 1895
- Tsige, Meaza**  
*see* Arroyo, Marcos, 1290
- Tsukayama, Seikoh**  
*see* Nakaza, Eizo, 1858
- Tufekci, E.**  
Exact Solution of Out-of-Plane Problems of an Arch with Varying Curvature and Cross Section, 494
- Tummala, Archana**  
*see* Bolton, James, 745
- Tuncay, Kagan**  
*see* Durmusoglu, Ertan, 39

- Tung, Karen C. F.**  
*see* Lo, Tommy Y., 352
- Tung, W. K.**  
*see* Leung, Christopher K. Y., 484  
*see* Leung, Christopher K. Y., 485
- Turcotte, Philippe**  
Cracking Tendency of Self-Compacting Concrete Subjected to Restrained Shrinkage: Experimental Study and Modeling, 1266
- Turk, Goran**  
*see* Savsek-Safic, Simona, 1648
- Turner, Ian L.**  
Discriminating Modes of Shoreline Response to Offshore-Detached Structures, 1873
- Turoczy, Rod E.**  
Determining the Content of the First Course in Transportation Engineering, 1423
- Enhancing Short-Term Traffic Forecasting with Traffic Condition Information, 1712
- Tutumluer, Erol, ed.**  
*see* Huang, Baoshan, ed., 2079  
*see* Pan, Tongyan, 1726
- Tutuncu, Ilker**  
Compression Behavior of Nonslender Cylindrical Steel Members with Small and Large-Scale Geometric Imperfections, 1560
- Twisdale, Lawrence A., Jr.**  
*see* Vickery, Peter J., 1930  
*see* Vickery, Peter J., 1931
- Tyagi, R. D.**  
*see* Brar, Satinder K., 1946  
*see* Verma, M., 1969
- Tyler, Scott W.**  
*see* Albright, William H., 906
- Tzamali, Eleftheria**  
Improved Design for Vision-Based Incident Detection in Transportation Systems using Real-Time View Transformations, 1755
- Tzeng, Chi-Shiang**  
*see* Wang, Cheng-Der, 12
- Tzeng, Duen-Bin**  
*see* Lin, Shiou-Gwo, 1647
- U, José Terán**  
Remarkable Rotation, 1994
- Uang, C. M.**  
*see* Chou, C. C., 118
- Uang, Chia-Ming**  
*see* Richards, Paul W., 1554  
*see* Richards, Paul W., 1555
- Uber, James**  
*see* Janke, Robert, 1834  
*see* Murray, Regan, 1831
- Uber, James G.**  
*see* Berry, Jonathan, 1823
- Uddin, Waheed**  
*see* Boriboonsomsin, Kanok, 1753
- Udoeyo, Felix F.**  
Potential of Wood Waste Ash as an Additive in Concrete, 1330
- Udwadia, Firdaus E.**  
*see* Phohomsiri, Phailaung, 503
- Uemura, Shigeki**  
*see* Tandukar, Madan, 601
- Ulery, A.**  
*see* McShannon, J., 1424
- Ulmer, Jared M.**  
*see* Miller, John S., P.E., 1674
- Umamahesh, N. V.**  
*see* Prasad, A. Srinivas, 1189
- Umeda, Makoto**  
Observation and Simulation of Floodwater Intrusion and Sedimentation in the Shichikashuku Reservoir, 1020
- Umeyama, Motohiko**  
Transformation, Attenuation, Setup, and Undertow of Internal Waves on a Gentle Slope, 1901
- Ung, Francis**  
*see* Huo, X. Sharon, 1992
- Unger, Jens**  
Riprap Failure at Circular Bridge Piers, 966
- Unger, Jörg F.**  
System Identification and Damage Detection of a Pre-stressed Concrete Beam, 1606
- Urala, Viswanath**  
*see* Green, Perry S., 1493
- Urano, Kohhei**  
*see* Himeno, Shuji, .nagaoka.ac.jp, 616
- Urban Drainage Standards Committee of the Standards Development Council of the Environmental and Water Resources Institute of ASCE**  
Standard Guidelines for the Design of Urban Stormwater Systems ASCE/EWRI 45-05; Standard Guidelines for Installation of Urban Stormwater Systems ASCE/EWRI 46-05; Standard Guidelines for the Operation and Maintenance of Urban Stormwater Systems ASCE/EWRI 47-05, 2089
- Urban Drainage Standards Committee of the Standards Development Council of the Environmental and Water Resources Institute of ASCE**  
Standard Guidelines for the Design of Urban Subsurface Drainage (ASCE/EWRI 12-05); Standard Guidelines for the Installation of Urban Subsurface Drainage (ASCE/EWRI 13-05); and Standard Guidelines for the Operation and Maintenance of Urban Subsurface Drainage (ASCE/EWRI 14-05), 2090
- Usami, Tsutomu**  
*see* Chen, Zhiyi, 1486
- Usmen, Muntaz A., P.E.**  
*see* Baradan, Selim, 342
- Ustun, Aydin**  
Long-Range Geoid Testing by GPS-Leveling Data in Turkey, 1643
- Uwakweh, Benjamin Obinero**  
Motivational Climate of Construction Apprentice, 341

S  
AUTHOR INDEX

Vasileva

- Uy, Brian  
*see* Chen, Ju, 1631  
*see* Pi, Yong-Lin, 1515  
*see* Pi, Yong-Lin, 1516
- Uyumaz, Ali  
Fuzzy Logic Model for Equilibrium Scour Downstream of a Dam's Vertical Gate, 1038
- Uzarski, Donald R., ed.  
*see* Wang, Kelvin C. P., ed., 2049
- Vaicaitis, Rimas  
*see* Dogan, Vedat, 63
- Vairavamoorthy, K.  
*see* Gorantiwar, Sunil D., 1201  
*see* Smout, Ian K., 1202  
*see* Yan, J. M., 752
- Val, Dimitri V.  
*see* Segal, Fred, 529
- Valavalas, Srinivas  
Area-Rated Rational Coefficients for Portland Cement Pervious Concrete Pavement, 1098
- Valdeasas, Juan B.  
*see* Kim, Tae-Woong, 1084
- Valdes, Julio R.  
Stress-Controlled Filtration with Compressible Particles, 858
- Valencia, Félix  
*see* Pacheco, Sadott, 621
- Valiani, Alessandro  
Divergence Form for Bed Slope Source Term in Shallow Water Equations, 997
- Valiente, A.  
Symmetric Catenary of a Uniform Elastic Cable of Neo-Hookean Material, 509
- Vallejo, Luis E.  
Degradation of a Granular Base under a Flexible Pavement: DEM Simulation, 56  
*see* Lobo-Guerrero, Sebastian, 32  
*see* Lobo-Guerrero, Sebastian, 850
- Vallero, D. A.  
Preventing Disputes with Empathy, 1430
- van Ballegooij, Rick  
*see* Melville, Bruce, 964
- van Ballegooij, Sjoerd  
*see* Melville, Bruce, 956  
*see* Melville, Bruce, 964  
*see* Melville, Bruce, 988
- Van Blaricum  
*see* Dawsey, Wesley J., 1825
- van Bloemen Waanders, Bart G.  
*see* Laird, Carl D., 1826
- van de Lindt, John W.  
Damage and Damage Prediction for Wood Shearwalls Subjected to Simulated Earthquake Loads, 1381
- Van Dessel, Steven  
*see* Khire, Ritesh A., 1603
- Van Dusen, Michael  
*see* Sharaf, Mohamed H., 230
- van Gelder, Boudewijn H. W.  
*see* Han, Jen-Yu, 1660
- van Lint, J. W. C.  
Reliable Real-Time Framework for Short-Term Freeway Travel Time Prediction, 1765
- van Loosdrecht, Mark C. M.  
*see* de Kreuk, Merle K., 677  
*see* Wilsenach, Jac A., 620
- Van Marcke, Erik  
*see* Taylor, Craig, 1935
- van Noortwijk, Jan M.  
*see* Korving, Hans, 1039
- van Reenen, David  
*see* Mukhopadhyaya, Phalguni, 101
- van Zyl, Jakobus E.  
Explicit Integration Method for Extended-Period Simulation of Water Distribution Systems, 969
- Vanajakshi, Lelitha  
System-Wide Data Quality Control of Inductance Loop Data using Nonlinear Optimization, 263
- Vanapalli, Sai K.  
*see* Punthataecha, Koonnamas, 1292
- Vanapalli, Sai K., P.E.  
*see* Puppala, Anand J., P.E., 846
- Vanegas, Jorge  
*see* Jeon, Christy Mihyeon, 1793
- Vangpaisal, Thaveesak  
*see* Bouazza, Abdelmalek, 871
- Vanhoucke, Mario  
Work Continuity Constraints in Project Scheduling, 289
- Vanček, Petr  
*see* Berber, Mustafa, 1664  
*see* Koohzare, Azadeh, 1663
- Vanoni, Vito A., ed.  
Sedimentation Engineering, 2084
- Varadarajan, A.  
Constitutive Model for Rockfill Materials and Determination of Material Constants, 35
- Vardy, Alan  
*see* Shimada, Masashi, 961
- Varghese, Koshy  
*see* Maheswari, J. Uma, 336
- Varoglu, Erol  
Midply Wood Shear Wall System: Concept and Performance in Static and Cyclic Testing, 1578
- Varyani, Kamlesh S.  
*see* Pham, Xuan P., 1860
- Vasconcelos, Jose G.  
Improved Simulation of Flow Regime Transition in Sewers: Two-Component Pressure Approach, 987
- Vasileva, Irina V.  
*see* Dempsey, Kevin M., 182

- Vázquez-Cendón, M. E.**  
*see* Pérez, G., 977
- Veach, Coy M., P.E.**  
 There's No Such Thing as Engineering Ethics, 1913
- Vecchio, F. J.**  
*see* Zhou, C. E., 581
- Vecchio, Frank J.**  
*see* Montoya, Esneyder, 1318
- Venkataramanan, G.**  
*see* McShannon, J., 1424
- Venosa, Albert D.**  
*see* Boufadel, Michel C., 668  
*see* Kaku, Vikram J., 593  
*see* Wrenn, Brian A., 591
- Ventura, Francesca**  
 Estimating Evaporation from Bare Soil using Soil Moisture Data, 1181
- Venugopal, K.**  
*see* Jain, M. K., 1136
- Verma, Ashish**  
 Developing Integrated Schedules for Urban Rail and Feeder Bus Operation, 1788
- Verma, M.**  
 Aerobic Biofiltration Processes — Advances in Waste-water Treatment, 1969  
*see* Brar, Satinder K., 1946
- Vesga, Luis F.**  
*see* Lobo-Guerrero, Sebastian, 32
- Vesilind, P. A.**  
*see* Vallero, D. A., 1430
- Vickery, Peter J.**  
 HAZUS-MH Hurricane Model Methodology. I: Hurricane Hazard, Terrain, and Wind Load Modeling, 1930
- HAZUS-MH Hurricane Model Methodology. II: Damage and Loss Estimation, 1931
- Vidal, P.**  
 Influence of Hopper Eccentricity on Discharge of Cylindrical Mass Flow Silos with Rigid Walls, 542
- Vidic, Radisav D.**  
*see* Feng, Wengu, 615
- Viersman, Warren, Jr., ed.**  
 State Water Resources Planning in the United States, 2091
- Vigh, Attila**  
 Approximate Analysis of Bridges for the Routing and Permitting Procedures of Overweight Vehicles, 132
- Vijayaraghavan, Krishna**  
 Radioactive Waste Foams: Formation and Mitigation, 680
- Viklander, Maria**  
*see* Reinosdotter, Karin, 612
- Vilalai, Sirapong**  
*see* Gabriel, Steven A., 652
- Vincent, John F., P.E.**  
 Evaluation of Distress in Supports of Hyperbolic Paraboloid Shell, 1364
- Vindiganavile, V.**  
 Size Effects and the Dynamic Response of Plain Concrete, 1315
- Vipulanandan, C.**  
*see* Kim, Jeewoong, 687
- Viraraghavan, Thiruvekatachari**  
*see* Mihial, Darrell J., 1951  
*see* Mysore, Deepa, 1957  
*see* Ramakrishna, Devikaran M., 1962  
*see* Singh, Kripa Shankar, 699
- Virgin, Lawrence N.**  
*see* Plaut, Raymond H., 527
- Vishal, R.**  
*see* Kumar, Paveen, 1326
- Viswanath, G. K.**  
*see* Prasad, A. Srinivasa, 1189
- Vítkovský, John**  
 Numerical Error in Weighting Function-Based Unsteady Friction Models for Pipe Transients, 1001
- Vítkovský, John P.**  
 Systematic Evaluation of One-Dimensional Unsteady Friction Models in Simple Pipelines, 1000
- Vittal, Sameer**  
*see* Hajela, Prabhat, 77
- Vo, Diep**  
*see* Ramamurthy, A. S., 1212  
*see* Ramamurthy, A. S., 1219
- Vo, K. K.**  
*see* Wang, C. M., 1463
- Vogel, Richard M.**  
*see* Douglas, Ellen M., 1120
- Vogel, Thomas**  
*see* Zwicky, Daia, 1508
- Voice, Thomas C.**  
*see* Gellner, W. James, II, 773
- Volpe, Richard L., P.E.**  
*see* Hook, David E., P.E., 2032
- von Bremen, Hubertus F.**  
*see* Phohomsri, Phailaung, 503
- Vondrák, Jiří**  
 Use of Fresnel Enantiomorphic Diffraction in Surveying Laser Methods, 1650
- Voon, K. C.**  
 Experimental In-Plane Shear Strength Investigation of Reinforced Concrete Masonry Walls, 1478
- Vorster, Michael**  
*see* Tatum, C. B., 386  
*see* Tatum, C. B., P.E., 385
- Vorster, Michael C.**  
*see* Lucko, Gunnar, 359
- Voyiadjis, George Z.**  
*see* Alsaleh, Mustafa I., 37

## AUTHOR INDEX

Wang

- Vucetic, Mladen  
*see* Hsu, Chu-Chung, 900
- Vun, P. L.  
*see* Dunn, S. L., 1881
- Waara, F.  
Price and Nonprice Criteria for Contractor Selection, 367
- Wadda, Moe M.  
*see* Skolicki, Zbigniew, 1822
- Wadud, Zia  
Design Charts for Helicoidal Stair Slabs with Landing at Midspan, 1470
- Walhlin, Brian T.  
Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Theory, 1186
- Automatic Downstream Water-Level Feedback Control of Branching Canal Networks: Simulation Results, 1187
- see* Clemmens, Albert J., 1121
- Waldorff, Joseph S.  
Case Study: Mapping Tsunami Hazards Associated with Debris Flow into a Reservoir, 931
- Waldron, Peter  
*see* Guadagnini, Maurizio, 235
- Walker, Aaron K.  
*see* Li, Yadong, P.E., 638
- Walker, Andrew R.  
*see* Ledbetter, Stephen R., 98
- Walker, Harold W.  
*see* Bob, Mustafa, 600
- Walker, Polly A.  
Impact of Politics on the Colorado River Basin Water Agreement: In-Depth Administrative Analysis, 1911
- Walker, Rohan  
Vertical Drain Consolidation with Parabolic Distribution of Permeability in Smear Zone, 866
- Walk-Laufer, B.  
*see* Schleser, M., 1338
- Wallace, John W.  
*see* Taciroglu, Ertugrul, 898
- Wallace, William A.  
*see* Mendonça, David, 1163
- Wallis, Steve  
*see* Cao, Zhixian, 1059
- Walters, Godfrey A.  
*see* van Zyl, Jakobus E., 969
- Walters, Matthew C.  
Computation of Mixed-Mode Stress Intensity Factors for Cracks in Three-Dimensional Functionally Graded Solids, 435
- Walters, R.  
*see* Aberle, J., 990
- Walters, Russell  
*see* Elmisalami, Tarek, 414
- Walters, Russell C.  
*see* Gao, Zhili, 405
- Walton, John C., P.E.  
*see* Rice, Robert W., P.E., 737
- Wan, Yongshan  
Optimization of Frequency Distribution of Storm-Water Discharges for Coastal Ecosystem Restoration, 1835
- Wang, Bo  
*see* Teng, J. G., 198
- Wang, C. H.  
*see* Liu, Rong, 60
- Wang, C. M.  
Membrane Analysis and Minimum Weight Design of Submerged Spherical Domes, 1463
- see* Phungpaengam, B., 436
- see* Zhang, Y. Y., 534
- Wang, Cheng  
*see* Zhang, Yin, 144
- Wang, Cheng-Bo  
*see* Hou, Chao-Sheng, 555
- Wang, Cheng-Der  
Automatically Computing the Displacements and Stresses Induced by Three-Dimensional Arbitrarily Shaped Loads in a Transversely Isotropic Medium, 18
- Displacements and Stresses Due to a Uniform Vertical Circular Load in an Inhomogeneous Cross-Anisotropic Half-Space, 12
- Wang, Chi-hsiang  
Seismic Reliability of Low-Rise Nonsymmetric Wood-frame Buildings, 1513
- Wang, Chih-Yin  
*see* Jou, Yow-Jen, 1794
- Wang, De  
*see* Zhu, Wei, 1792
- Wang, Dian-Hai  
Entropy Models of Trip Distribution, 1774
- Wang, Dingbao  
*see* Cai, Ximing, 1844
- Wang, Dongsheng  
Quantitative Model of Coagulation with Inorganic Polymer Flocculant PACI: Application of the PCNM, 647
- Wang, H. L.  
*see* Shang, J. Q., P.E., 1277
- Wang, Hao  
Urban Origins/Destinations from High-Resolution Remote Sensing Images, 1783
- Wang, Jialai  
Fracture Analysis of Shear Deformable Bi-Material Interface, 466
- Wang, Jian  
Hybrid Data Mining/Genetic Shredding Algorithm for Reliability Assessment of Structural Systems, 1582
- Wang, Jian-Hua  
Correlation between Cyclic Resistance Ratios of Intact and Reconstituted Offshore Saturated Sands and Silts with the Same Shear Wave Velocity, 924

- Wang, Judith**  
*see* Gasparini, D. A., 1374
- Wang, Judith C.**  
Influence of Temperature and Pressure on the Dynamic Properties of Rubber-Modified Asphalt Concrete, 1275
- Wang, Kejin**  
Evaluation of Pavement Curing Effectiveness and Curing Effects on Concrete Properties, 1302
- Wang, Kelvin C. P., ed.**  
Applications of Advanced Technology in Transportation, 2049
- Wang, Kun**  
Disaster Recovery System Model with E-Government Case Study, 1937
- Wang, L. B.**  
*see* Wang, X., 21
- Wang, Lei**  
*see* Jia, Shaofeng, 1819
- Wang, M. K.**  
*see* Lai, C. H., 1942
- Wang, Ping**  
Surface Analysis of Chesapeake Bay Water Quality Response to Different Nutrient and Sediment Loads, 625
- see* Chao, Keh-Ping, 657
- Wang, Qian**  
Alternative Formulations for Structural Optimization: An Evaluation Using Frames, 1624
- see* Chan, Chun-Man, 1536
- Wang, Qing-Gai**  
Method for Measurement of Canopy Interception under Sprinkler Irrigation, 1185
- Wang, Sam S. Y.**  
*see* Chao, Xiaobo, 753
- see* Ding, Yan, 1055
- see* Ding, Yan, 1900
- see* Nguyen, Dan K., 958
- see* Wu, Weiming, 1016
- Wang, Shuqing**  
*see* Hu, Sau-Lon James, 477
- Wang, Tao**  
Creep Buckling of Shallow Parabolic Concrete Arches, 1601
- see* de Neufville, Richard, 1147
- Wang, Weijun**  
*see* Sun, Lu, 505
- Wang, X.**  
Continuous Interface Elements Subject to Large Shear Deformations, 21
- Wang, Xiangyu**  
Potential of Augmented Reality as an Assistant Viewer for Computer-Aided Drawing, 280
- Wang, Xingzhe**  
Dynamic Stability of Ferromagnetic Beam-Plates with Magnetoelastic Interaction and Magnetic Damping in Transverse Magnetic Fields, 476
- Wang, Y. H.**  
Laboratory Studies of Two Common Saprolitic Soils in Hong Kong, 864
- Wang, Yongsheng**  
*see* De Silva, Dakshina G., 1924
- Wang, Yu-Ren**  
*see* Gibson, G. Edward, Jr., 1241
- Wani, Altaf H.**  
Biologically Mediated Reductive Transformation of Ordnance-Related Compounds by Mixed Aquifer Culture using Acetate as the Sole Carbon Source: Laboratory Treatability Studies for Field Demonstration, 1948
- Wanitkorkul, Assawin**  
*see* Filiatrault, André, 1987
- Ward, Frank A.**  
Integrated Economic, Hydrologic, and Institutional Analysis of Policy Responses to Mitigate Drought Impacts in Rio Grande Basin, 1851
- Wareham, D. G.**  
Solidification of New Zealand Harbor Sediments using Cementitious Materials, 1294
- Warn, Gordon P.**  
Property Modification Factors for Seismically Isolated Bridges, 140
- Warrenmuende, Kraig**  
*see* Mu, Bin, 196
- see* Wu, Hwai-Chung, 147
- Warren, Christopher L., P.E.**  
Turbocharged Organizational Change through High-Octane Management Training, 1916
- Warren, K. A.**  
Field Study to Investigate WIDE Technology for TCE Extraction, 880
- Warrick, A. W.**  
*see* Furman, A., 1230
- see* Lazarovitch, N., 1225
- Wartman, Joseph**  
Geotechnical Physical Modeling for Education: Learning Theory Approach, 1431
- Performance and Analyses of Mechanically Stabilized Earth Walls in the Tecoman, Mexico Earthquake, 1395
- see* Grubb, Dennis G., 830
- see* Grubb, Dennis G., 831
- see* Porbaha, Ali, ed., 2072
- Warwick, John J.**  
*see* Kish, Suzanne M., 739
- Wasan, Darsh**  
*see* Vijayaraghavan, Krishna, 680
- Washington, Simon**  
*see* Kim, Do-Gyeong, 1692
- Wasserman, Edward P.**  
*see* Huo, X. Sharon, 1992
- Waszczyzyn, Zenon**  
*see* Kuñiar, Krystyna, 279

## AUTHOR INDEX

Williams

- Watanabe, Kohei  
Route Selection for a New Transportation System in Hillside Urban Areas: A Case Study in Nagasaki, Japan, 1781
- Watkins, D. W., Jr.  
*see* Kracman, D. R., 1807
- Watkins, David W., Jr.  
Economic-Based Optimization of Panama Canal System Operations, 1852
- Watson, Jean-Paul  
*see* Berry, Jonathan, 1823
- Watanadechachan, Prapun  
Thermal Compatibility and Durability of Wearing Surfaces on GFRP Bridge Decks, 149
- Watts, Philip  
*see* Walder, Joseph S., 931
- Watts, Richard J.  
Treatment of Contaminated Soils and Groundwater using ISCO, 1939
- Waythomas, Christopher F.  
*see* Walder, Joseph S., 931
- Weathersby, Anne  
*see* Medina, Victor F., P.E., 1950
- Weber, Matthew A.  
Value of Instream Recreation in the Sonoran Desert, 1806
- Wedin, D. A.  
*see* Sridhar, V., 1216
- Wei, Xiaosheng  
Early Hydration Process of Portland Cement Paste by Electrical Measurement, 1272
- Wei, Yong  
Well-Balanced Finite-Volume Model for Long-Wave Runup, 1866
- Weiss, Jason  
*see* Puri, Sunil, 1296
- Weiss, Jeffrey D.  
Storm Water Detention Ponds: Modeling Heavy Metal Removal by Plant Species and Sediments, 717
- Weiss, W. Jason  
*see* Yang, Zhipu, 1307
- Wekezer, Jerry  
*see* Kwasniewski, Leslaw, 1391
- Weldon, Brad D.  
*see* Kurama, Yahya C., 1538
- see* Shen, Qiang, 1539
- Wen, Sihai  
Effects of Strain and Damage on Strain-Sensing Ability of Carbon Fiber Cement, 1299
- Wen, Y. K.  
*see* Liu, Min, 1444
- Weng, Chih-Huang  
Laboratory-Scale Evaluation of Cr(VI) Removal from Clay by Electrokinetics Incorporated with Fe(O) Barrier, 1959
- Werth, Charles J.  
*see* Brennan, Rachel A., 673
- Westerhoff, Paul K.  
*see* Drewes, Jörg E., 748
- Westrick, Judy  
*see* Xagoraraki, Irene, 692
- Wey, Ming-Yen  
*see* Lin, Chiou-Liang, 708
- Wheaton, K. P.  
*see* Naito, C. J., 1982
- White, Dan  
*see* Myerchin, Greta, 188
- White, David C.  
*see* Nedović-Budić, Zorica, 1795
- White, David J.  
Reclaimed Hydrated Fly Ash as a Geomaterial, 1283
- see* Han, Jie, P.E., ed., 2045
- see* Handy, R. L., 782
- see* Handy, R. L., 783
- see* Suleiman, Muhammed T., 51
- see* Suleiman, Muhammed T., 1611
- White, Joshua  
*see* Barelli, Michael, 127
- Whiteaker, Timothy L.  
From a NEXRAD Rainfall Map to a Flood Inundation Map, 1074
- Whitman, Robert V.  
*see* Kircher, Charles A., 1927
- Whittaker, Andrew S.  
*see* Escobar-Sandoval, Edgard D., 1614
- see* Sezen, Halil, 1367
- see* Warn, Gordon P., 140
- Wibowo, Andreas  
CAPM-Based Valuation of Financial Government Supports to Infeasible and Risky Private Infrastructure Projects, 312
- Wicklein, Edward A.  
*see* Khan, Liaqat A., 1005
- Wight, R. G.  
Development of FRP Short-Span Deployable Bridge — Experimental Results, 151
- Wilkinson, S. M.  
Analysis and Solution to Human-Induced Lateral Vibrations on a Historic Footbridge, 104
- Willett, David A.  
Accuracy of Ground-Penetrating Radar for Pavement Layer Thickness Analysis, 1673
- Williams, R. Lynn  
*see* Chen, Chi-Chung, 1836
- Williams, Sterling Greg  
Modeling of Lake Ice Characteristics in North America using Climate, Geography, and Lake Bathymetry, 187
- Williams, Todd O.  
A Stochastic Transformation Field Theory for Heterogeneous Materials, 564

**Williamson**

- Williamson, E. B.  
*see* Kaewkulchai, G., 1403
- Williamson, Eric B., P.E.  
*see* Ruth, Peter, 1401
- Willoughby, W. Douglas  
Automated Access, 2036
- Wilsenach, Jac A.  
Integration of Processes to Treat Wastewater and Source-Separated Urine, 620
- Wilson, G. V.  
*see* Fox, G. A., 1133
- Wilson, James H.  
*see* Beyene, Asfaw, 421
- Wilson, Scott A.  
*see* Schaad, David E., P.E., 738
- Wiltshire, Richard L., ed.  
GEO-Volution: The Evolution of Colorado's Geological and Geotechnical Engineering Practice, 2070
- Winch, Graham M.  
Critical Space Analysis, 335
- Winters, Danny  
*see* Mullins, Gray, 822
- Winters, Gerald K.  
*see* Willoughby, W. Douglas, 2036
- Wipf, Terry J.  
*see* Gao, Zhili, 405
- Wiraguna, S. I.  
*see* Amin, A. F. M. S., 440
- Wrigau, Scott  
Internet-Enabled Remote Observation and Control of a Shake Table Experiment, 271
- Wittler, James M.  
Calibration of Electromagnetic Induction for Regional Assessment of Soil Water Salinity in an Irrigated Valley, 1213
- Wöhling, Th.  
Efficient Solution of the Coupled One-Dimensional Surface — Two-Dimensional Subsurface Flow during Furrow Irrigation Advance, 1206
- Wolshon, Brian, P.E.  
Reversible Lane Systems: Synthesis of Practice, 1766
- Wong, Ching-Sze  
*see* Ng, Wing-Cheong, 1862
- Wong, Francis K. W.  
*see* Mostafa, Anirban, 1779
- Wong, G. Sam  
*see* Rollings, Raymond S., 1370
- Wong, Kevin K. F.  
*see* Zhao, Dianfeng, 535
- Wong, Lap-Chi  
*see* Lu, Ming, 408
- Wong, Louisa  
*see* Fang, Dongping, 345

**2006 ASCE TRANSACTIONS**

- Wong, M. B.  
Effect of Torsion on Limiting Temperature of Steel Structures in Fire, 1512
- Wong, Miguel  
Reanalysis and Correction of Bed-Load Relation of Meyer-Peter and Müller using Their Own Database, 1049
- Wong, R. C. K.  
In Situ Pore Pressure Responses of Native Peat and Soil under Train Load: A Case Study, 904
- Wong, S.C., ed.  
*see* Wang, Kelvin C. P., ed., 2049
- Wong, T. K.  
*see* Tsai, C. C., 467
- Wong, T. N.  
*see* Teng, J. G., 198
- Wong, Tommy S. W.  
Kinematic Wave Parameters for Trapezoidal and Rectangular Channels, 1088
- Wong, Y. L.  
*see* Li, C. S., 1610
- see* Yu, T., 233
- Wongwises, Somchai  
*see* Chinnarasri, Chayuth, 1172
- Woo, Byung-Hun  
*see* Park, Hyo Seon, 1625
- Wood, Andrew W.  
*see* McGuire, Marketa, 1811
- Wood, James V.  
Full-Scale Test Behavior of Cold-Formed Steel Roof Trusses, 1500
- see* Dawe, John L., 1499
- Woodruff, Paul H., P.E.  
Educating Engineers to Create a Sustainable Future, 631
- Woodward, C. B.  
*see* Barr, P. J., 1365
- Woolard, Craig  
*see* Myerchin, Greta, 188
- Woolhiser, David A.  
Estimating Infiltration in the Upper Split Wash Watershed, Yucca Mountain, NV, 1083
- Work, David  
*see* Inyang, Hilary I., 1289
- Wozniak, Chenine  
*see* Cort, Todd L., 595
- Wren, D. G.  
*see* Kuhne, R. A., 1066
- Wrenn, Brian A.  
Effects of Nutrient Source and Supply on Crude Oil Biodegradation in Continuous-Flow Beach Microcosms, 591
- Wright, Kenneth, P.E.  
Tipon: Water Engineering Masterpiece of the Inca Empire, 2093

## AUTHOR INDEX

Xie

- Wright, Leonard T.**  
Prioritizing Sanitary Sewers for Rehabilitation using Least-Cost Classifiers, 1154
- Wright, Neal R., ed.**  
Application of GIS Technologies in Port Facilities and Operations Management, 2048
- Wright, Steven J.**  
*see* Vasconcelos, Jose G., 987
- Wu, B. J.**  
*see* Zheng, Y. H., 1865
- Wu, Bi-Jun**  
Response Amplitude and Hydrodynamic Force for a Buoy over a Convex, 1864
- Wu, Chao**  
*see* Ye, Mao, 1021
- Wu, Chin H.**  
*see* Yao, Aifeng, 541
- Wu, Yuan**, Hengliang, 479
- Wu, David**  
*see* Lechman, Jeremy, 490
- Wu, Fuqiang**  
Bivariate Quasi-Steady Model for Prediction of Roof Corner Pressures, 61
- Wu, H.**  
*see* Xiao, Y., 119
- Wu, Hwai-Chung**  
Durability of FRP Composite Bridge Deck Materials under Freeze-Thaw and Low Temperature Conditions, 147  
*see* Mu, Bin, 196
- Wu, Jane-Yii**  
*see* Lin, Yun-Huin, 630
- Wu, Jin**  
*see* Xu, Xingxin, 932
- Wu, Jing**  
Uncertainty Analysis for Coupled Watershed and Water Quality Modeling Systems, 1838
- Wu, Jonathan T. H.**  
Allowable Bearing Pressures of Bridge Sills on GRS Abutments with Flexible Facing, 855
- Wu, Jong-Cheng**  
Implementation of a Feasible Control Design Process Incorporating Robustness Criteria for Wind-Excited High-Rise Buildings, 1448
- Wu, Jun**  
*see* Burgueño, Rigoberto, 234
- Wu, Ning**  
*see* Tian, Zong Z., 1685
- Wu, Shin**  
*see* Sargand, Shad M., 1746
- Wu, Ting Nien**  
Distribution of Methylmercury in a Mercury-Contaminated Ecosystem, 1961
- Wu, Ting-Nien**  
Detection of Illegal Dump Deposit with GPR: Case Study, 1955
- Wu, Weiming**  
Formulas for Sediment Porosity and Settling Velocity, 1016
- Wu, X. J.**  
*see* Liu, Rong, 60
- Wu, Yeong S.**  
*see* Chiang, Chow F., 651
- Wu, Y.-F.**  
Flexural and Shear Strength of Composite Lintels in Glass-Fiber-Reinforced Gypsum Wall Constructions, 1306
- New Avenue of Achieving Ductility for Reinforced Concrete Members, 1587
- Wu, Yingxiang**  
*see* Gao, Fuping, 1727
- Wu, Zhimin**  
*see* Xu, Shilang, 1357
- Wu, Zhishen**  
*see* Niu, Hedong, 1345
- Wurbs, Ralph A.**  
Methods for Developing Naturalized Monthly Flows at Gaged and Ungaged Sites, 1076
- Xagorarakis, Irene**  
Inactivation Kinetics of the Cyanobacterial Toxin Microcystin-LR by Free Chlorine, 692
- Xhou, Aixi**  
*see* Keller, Thomas, 244
- Xi, Yumping**  
Damage Theory Based on Composite Mechanics, 561
- Xia, Cenling**  
Multilayer Averaged and Moment Equations for One-Dimensional Open-Channel Flows, 1013
- Xia, Jun**  
*see* Jia, Shaofeng, 1819
- Xia, Kaiming**  
New Stabilized Finite Element Method Embedded with a Cap Model for the Analysis of Granular Materials, 460
- Xia, Yong**  
Auto-Parametric Vibration of a Cable-Stayed-Beam Structure under Random Excitation, 463  
*see* Zanardo, Giovanna, 162
- Xiang, Y.**  
*see* Zhang, L., 514
- Xiao, Y.**  
Experimental Studies on Seismic Behavior of Steel Pile-to-Pile-Cap Connections, 119
- Xiao, Yan**  
*see* Shan, Bo, 219
- Xiao, Zhi-Gang**  
Measurement of Truck Axle Weights by Instrumenting Longitudinal Ribs of Orthotropic Bridge, 155
- Xie, Hao**  
Developing a Web-Based System for Large-Scale Environmental Hydraulics Problems with Application to Oil Spill Modeling, 264

- Xie, Mowen  
GIS-Based Implementation of Three-Dimensional Limit Equilibrium Approach of Slope Stability, 839
- Xing, Hao-Feng  
Construction of Concrete-Faced Rockfill Dams with Weak Rocks, 849
- Xiong, G. J., tu.edu.cn  
Effect of Contact Pressure on Bond Strength of Fiber-Reinforced Polymer to Concrete, 215
- Xiong, Yong-Liang  
*see* Chan, Wai-Shan, 1656
- Xu, B.  
Probabilistic Stability Analyses of Embankments Based on Finite-Element Method, 911
- Xu, Lei  
Seismic Design Optimization of Steel Building Frameworks, 1466
- Xu, P.  
Application of Fenton's Reagent to Remediate Diesel Contaminated Soils, 1941
- Xu, Shilang  
Study on the Average Fracture Energy for Crack Propagation in Concrete, 1357
- Xu, Xingxin  
Case Study: Application of GPR to Detection of Hidden Dangers to Underwater Hydraulic Structures, 932
- Xu, Y. L.  
*see* Guo, W. H., 478
- Xu, You-Lin  
*see* Chan, Wai-Shan, 1656
- Yahya, I. A.  
*see* Abdul-Rahman, H., 300
- Yajima, Syuji  
*see* Sakano, Masahiro, 171
- Yam, Michael C. H.  
*see* Shen, Li-Yin, 329
- Yamada, Kentaro  
*see* Xiao, Zhi-Gang, 155
- Yamada, Takemine  
*see* Suzuki, Kiichi, 57
- Yamaguchi, Kouta  
*see* Xiao, Zhi-Gang, 155
- Yamamoto, Hiroto  
*see* Sana, Ahmad, 1040
- Yamamoto, Yoichi  
*see* Takahashi, Naoki, 834
- Yaman, Cevat  
*see* Korkut, Eytür Nafiz, 614
- Yamazaki, Fumio  
*see* Shimizu, Yoshihisa, 801
- Yan, An  
*see* Mu, Bin, 196
- Yan, J. M.  
Contaminant Transport Model for Unsaturated Soil using Fuzzy Approach, 752
- Yan, W. M.  
*see* Wang, Y. H., 864
- Yan, Xi-Luan  
*see* Zhu, Jian-Hang, 722
- Yan, Xuedong  
Geometric Models to Calculate Left-Turn Sight Distance for Signalized Intersections on Horizontal Curves, 1738
- Yanagisawa, Eiji  
*see* Suzuki, Kiichi, 47
- Yandamuri, S. R. Murty  
Multiobjective Optimal Waste Load Allocation Models for Rivers using Nondominated Sorting Genetic Algorithm-II, 1814
- Yanful, Ernest K.  
*see* Mohan, Prasanna K., 613
- Yang, Demao  
Numerical Simulation of High-Strength Steel Box-Shaped Columns Failing in Local and Overall Buckling Modes, 1492
- Yang, H.  
Behavior of Unsaturated Layered Soil Columns during Infiltration, 1105
- Yang, Henry T. Y. Yang  
*see* Ma, Tian-Wei, 1549
- Yang, Hezhen  
*see* Li, Huajun, 533
- Yang, Hong  
*see* Jia, Shaofeng, 1819
- Yang, J.  
Frequency-Dependent Amplification of Unsaturated Surface Soil Layer, 827
- Yang, Jianqiang  
*see* Bruen, Michael, 1131
- Yang, Ke  
Numerical Solution for Laterally Loaded Piles in a Two-Layer Soil Profile, 910
- Yang, Luo  
*see* Liang, Robert, 879
- Yang, Michael, ed.  
*see* Parsons, Robert L., ed., 2067
- Yang, Min-Lung  
Innovative Central Opening Strut System for Foundation Excavation, 293
- Yang, Songtao  
*see* Ling, Hoe I., 580
- Yang, W. F.  
*see* Hsieh, C. D., 1954
- Yang, Xiao-MingN  
*see* Li, Zhong-Xian, 1724

## AUTHOR INDEX

Yildirim

### Yang, Yaowen

Integrated Optimization of Control System for Smart Cylindrical Shells using Modified GA, 66

### Yang, Yong

*see* Leung, Christopher K. Y., 492

### Yang, Zheng-Mao

*see* Lie, Seng-Tjhen, 1475

*see* Lie, Seng-Tjhen, 1476

### Yang, Zhifu

Water Transport in Concrete Damaged by Tensile Loading and Freeze-Thaw Cycling, 1307

### Yankey, Greg

*see* Deschamps, Rick, 828

### Yao, Aifeng

Spatial and Temporal Characteristics of Transient Extreme Wave Profiles on Depth-Varying Currents, 541

### Yao, Chin-Liang

*see* Wang, Cheng-Der, 18

### Yao, Jun

*see* Sato, Chikashi, 586

### Yao, Rong-Han

*see* Wang, Dian-Hai, 1774

### Yao, Wenjuan

Internal Forces for Statically Indeterminate Structures having Different Moduli in Tension and Compression, 508

### Yapa, Poojitha D.

*see* Xie, Hao, 264

### Yaprak, T. T.

*see* Xiao, Y., 119

### Yarrington, Lane

*see* McKenna, Sean A., 1833

### Yasuda, Susumu

*see* Shimizu, Yoshihisa, 801

### Yasuhabara, Kazuya

*see* Hyde, Adrian F. L., 845

### Yates, J. K.

Avoiding and Minimizing Construction Delay Claim Disputes in Relational Contracting, 1421

Utilizing Dispute Review Boards in Relational Contracting: A Case Study, 1436

### Yatim, B.

*see* Othman, M. Y., 433

*see* Othman, M. Y., 434

### Yazbek, Waël

Adsorption and Desorption of Volatile Organic Compounds in Fluidized Bed, 648

### Yazdani, Nur

Large Wind Missile Impact Capacity of Residential and Light Commercial Buildings, 1990

*see* Haroon, Saif, 159

*see* Haroon, Saif Abdullah, 1382

### Yazdani, Nur, P.E.

Modeling Compressive Strength Development in Florida Concrete, 1362

*see* Mazunder, Anisur Rahman, 1352

### Ye, Mao

Case Study of an S-Shaped Spillway using Physical and Numerical Models, 1021

### Ye, Zhiming

*see* Yao, Wenjuan, 508

### Yee, Chung Yan

Fundamental Analysis of Profitability of Large Engineering and Construction Firms, 1260

Interactions between Business and Financial Strategies of Large Engineering and Construction Firms, 1254

### Yeh, Harry

Maximum Fluid Forces in the Tsunami Runup Zone, 1903

### Yeh, I-Cheng

Analysis of Strength of Concrete using Design of Experiments and Neural Networks, 1329

Exploring Concrete Slump Model using Artificial Neural Networks, 266

### Yeh, S. H.

*see* Lai, C. H., 1942

### Yeh, T. Y.

Field Investigation at a Chlorinated Ethylene Contaminated Site, 1963

### Yeh, Tsu-Hurng

*see* Chang, Hsin-Li, 1687

### Yeh, William W.-G.

*see* Loáiciga, Hugo A., 1116

### Yepes, Victor

Economic Heuristic Optimization for Heterogeneous Fleet VRPHESTW, 1694

### Yetgin, Sükrü

Study of Effects of Natural Pozzolan on Properties of Cement Mortars, 1356

### Yeung, Sau Fung

*see* Cheung, Sai On, 368

### Yi, Kyoo-Jin

Scheduling-Based Risk Estimation and Safety Planning for Construction Projects, 351

### Yi, Taewoo

Role of Particle Size and Ammonium Oxidation in Removal of 17 $\alpha$ -Ethinodiol in Bioreactors, 757

### Yi, Tianyi

Analyses of a Two-Story Unreinforced Masonry Building, 1505

Lateral Load Tests on a Two-Story Unreinforced Masonry Building, 1504

*see* Moon, Franklin L., 1506

### Yi, Xianjie

Quantifying the Effect of Rock Strength Criteria on Minimum Drilling Mud Weight Prediction using Polyaxial Rock Strength Test Data, 38

### Yıldırım, Gürol

Hydraulic Analysis and Direct Design of Multiple Outlets Pipelines Laid on Flat and Sloping Lands, 1226

### Yıldırım, Yetkin, P.E.

Evaluation of Viscosity Values for Mixing and Compaction Temperatures, 1322

- Yim, Solomon, P.E.**  
*see* Robertson, Ian N., 2009
- Yim, Solomon C. S.**  
Coupled Surge-Heave Motions of a Moored System.  
II: Stochastic Analysis and Simulations, 502  
*see* Lin, Huan, 501
- Yim, Solomon C. S. Yim**  
*see* Chansawat, Kasidit, 106
- Yin, Hao**  
*see* Zhang, Shu-Juan, 755
- Yin, Jian-Hua, ed.**  
*see* Han, Jie, P.E., ed., 2045
- Yin, Samuel Y. L.**  
*see* Pserng, H. Ping, 327
- Yin, Y.**  
*see* Hu, X. G., 1065
- Yin, Yue**  
*see* Hou, Chao-Sheng, 555
- Yiu, Kenneth T. W.**  
*see* Cheung, Sai On, 1411
- Yiu, Tak Wing**  
Logistic Likelihood Analysis of Mediation Outcomes,  
389
- Yiu, Tak Wing Yiu**  
*see* Cheung, Sai On, 368
- Yokoyama, Katsuhide**  
*see* Umeda, Makoto, 1020
- Yonge, David R.**  
*see* Alam, Mahbub, 623
- Yoo, Chai H.**  
Mechanics of Web Panel Postbuckling Behavior in  
Shear, 1595
- Yoo, Chungsik**  
*see* Kim, Kyungsik, 1558
- Yoo, Chulsang**  
*see* Kim, Tae-Woong, 1084
- Yoo, Chungsik**  
Case History of Geosynthetic Reinforced Segmental  
Retaining Wall Failure, 921
- Yoo, H. Harold**  
EDTA, NTA, Alkylphenol Ethoxylate and DOC Attenuation during Soil Aquifer Treatment, 674
- Yoo, Pyeong Jun**  
*see* Elseifi, Mostafa A., 452
- Yoon, J.**  
*see* Kawas, M. L., 1099
- Yoon, Jaewan, ed.**  
*see* Wright, Neal R., ed., 2048
- Yoshihara, H.**  
Failure Behavior of Spruce Wood under Bending-Shear  
Combined Stress Field, 1271
- You, Rey-Jer**  
Coordinate Transformation between Two Geodetic  
Datums of Taiwan by Least-Squares Collocation,  
1649
- Local Geoid Improvement using GPS and Leveling  
Data: Case Study, 1655
- You, Sheng-Jie**  
*see* Tsai, Yung-Pin, 602
- You, Y. G.**  
*see* Zheng, Y. H., 1865
- You, Ya-Ge**  
*see* Wu, Bi-Jun, 1864
- Youd, T. Leslie**  
*see* Chu, Daniel B., 922
- Young, Ben**  
*see* Chen, Ju, 1631
- Young, Bradley S.**  
*see* Kijewski-Correa, Tracy, 1588
- Young, C. Bryan**  
Updated Precipitation Frequency Estimates for Kansas  
City: Comparison with TP-40 and HYDRO-35,  
1092
- Young, D. L.**  
*see* Lo, D. C., 456
- Young, David C.**  
*see* Tsai, C. C., 467
- Young, David M.**  
*see* Tang, Wenzhe, 310
- Young, David T.**  
*see* Udoeyo, Felix F., 1330
- Young, James C.**  
*see* Chiang, Chow F., 651
- Young, Michael A.**  
*see* Vickery, Peter J., 1931
- Young, Thomas M.**  
*see* Huang, Xinjiang, 702
- Young, Travis S. M.**  
Anaerobic Biodegradation of RDX and TCE: Single-  
and Dual-Contaminant Batch Tests, 1949
- Young, Yin Lin**  
*see* Robertson, Ian N., 2009
- Young-Su, Kim**  
Use of Artificial Neural Networks in the Prediction of  
Liquefaction Resistance of Sands, 917
- Yu, Ann T. W.**  
Investigation of Critical Success Factors in Construction  
Project Briefing by Way of Content Analysis,  
404
- Yu, Cheng**  
Distortion Buckling Tests on Cold-Formed Steel  
Beams, 1490
- Yu, Daeyeong**  
Multiple Tandem Jets in Cross-Flow, 1027
- Yu, F.**  
*see* Yang, J., 779

## AUTHOR INDEX

Zengin

- Yu, Guoliang**  
Errors in the Bed Shear Stress as Estimated from Vertical Velocity Profile, 1220
- Performances of Hydraulics and Bedload Sediment Flushing in Rigid Channel using Surge Flows**, 1183
- Yu, Han-Qing**  
*see* Zhang, Shu-Juan, 755
- Yu, Jung-Ho**  
Evaluation Model for Information Systems Benefits in Construction Management Processes, 398
- Yu, Qiang**  
*see* Bažant, Zdeněk P., 558  
*see* Bažant, Zdeněk P., 1439
- Yu, Shaw L.**  
*see* Wu, Jing, 1838
- Yu, T.**  
Flexural Behavior of Hybrid FRP-Concrete-Steel Double-Skin Tubular Members, 233
- Yu, Xinying**  
*see* Atiquzzaman, Md., 1813
- Yu, Xueyuan**  
Factors Influencing Arsenite Removal by Zero-Valent Iron, 749
- Yuan, Bo**  
*see* Garber, Nicholas J., 1665
- Yuan, Ching**  
*see* Weng, Chih-Huang, 1959
- Yuan, Feng**  
*see* Wang, Kun, 1937
- Yuan, Hengliang**  
Fully Nonhydrostatic Modeling of Surface Waves, 479
- Yuan, Pao-Chiang**  
*see* Li, Yadong, P.E., 638
- Yue, Wusi**  
Large-Eddy Simulation of Turbulent Flow over a Fixed Two-Dimensional Dune, 996
- Yue, Z. Q.**  
*see* Pradhan, B., 36
- Yukseken, Yeliz**  
Comparison of Methods for Determining Specific Surface Area of Soils, 865
- Yulismanya, Wahyu**  
*see* Moses, Jonathan P., 143
- Yun, Young Mook**  
Strength of Two-Dimensional Nodal Zones in Strut-Tie Models, 1613
- Zaghoul, A.**  
*see* Baddour, R. E., 967
- Zagona, Edith**  
*see* Frevert, Donald, 1174
- Zagona, Edith A.**  
*see* Caron, John C., 1176  
*see* Prairie, James R., 1110
- Zain, Mohammed**  
*see* Budek, Andrew, 89
- Zakaria, N. A.**  
*see* Sinnakaudan, S. K., 983
- Zakrajšek, Majda**  
*see* Četina, Matjaž, 943
- Zanardo, Giovanna**  
Stiffness Assessment through Modal Analysis of an RC Slab Bridge before and after Strengthening, 162
- Zanuttigh, Barbara**  
Experimental Analysis and Numerical Simulations of Waves and Current Flows around Low-Crested Rubble-Mound Structures, 1856
- Zapata, Claudia E., ed.**  
*see* Miller, Gerald A., ed., 2096
- Zaramella, Mattia**  
*see* Marion, Andrea, 1061
- Zaritzky, Noemi**  
*see* Caravelli, Alejandro, 713
- Zarli, Alain**  
*see* Rezgui, Yacine, 364
- Zarrati, A. R.**  
Reduction of Local Scour in the Vicinity of Bridge Pier Groups using Collars and Riprap, 947
- Zayed, Tarek**  
*see* Al-Barqawi, Hassan, 1376  
*see* Minchin, R. Edward, Jr., 1258
- Zbib, Hussein**  
*see* Dessouky, Samer, 451
- Zdoumba, D.**  
*see* Tastani, S. P., 190
- Zdravkovic, L.**  
*see* Grammatikopoulou, A., 41
- Zech, Y.**  
*see* Proust, S., 1026
- Zedler, Emily A.**  
Sediment Transport over Ripples in Oscillatory Flow, 950
- Zee, Chong-Hung**  
Earthquake Hydrodynamic Pressure on Dams, 1046
- Zee, Raymond**  
*see* Zee, Chong-Hung, 1046
- Zeier, Benjamin**  
*see* Xagorarakis, Irene, 692
- Zekioglu, Atila, P.E.**  
Braced for the Future, 2040
- Zekkos, Dimitrios**  
Unit Weight of Municipal Solid Waste, 893
- Zeng, Hui**  
*see* Zhang, Tian C., 721
- Zeng, Xiangwu**  
*see* Wang, Judith C., 1275
- Zeng, Xiaogang**  
*see* Zhao, Fang, P.E., 251
- Zengin, Gulsum Emel**  
*see* Cokgor, Emine Ubay, 590

- Zerihun, D.**  
*see* Furman, A., 1230
- Zhai, Chao**  
*see* Ramamurthy, A. S., 954
- Zhan, J. M.**  
*see* Li, Y. S., 1876
- Zhang, Bao**  
*see* Zhu, Jian-Hang, 722
- Zhang, Burong**  
Design and Evaluation of Fiber-Reinforced Polymer Bond-Type Anchorages and Ground Anchors, 29
- Zhang, Dongnai, ed.**  
*see* Zhu, Hehua, ed., 2095
- Zhang, Feng, ed.**  
*see* Zhu, Hehua, ed., 2095
- Zhang, Hong**  
Particle Swarm Optimization for Preemptive Scheduling under Break and Resource-Constraints, 314  
Particle Swarm Optimization-Supported Simulation for Construction Operations, 413  
Permutation-Based Particle Swarm Optimization for Resource-Constrained Project Scheduling, 259
- Zhang, J.**  
Constructability Analysis of the Bridge Superstructure Rotation Construction Method in China, 323
- Zhang, Jim X.**  
*see* Aggour, M. Sherif, 930
- Zhang, Jingyu**  
*see* Suarez, Jorge, 1327
- Zhang, L.**  
Bivariate Flood Frequency Analysis Using the Copula Method, 1086  
Vibration of Open Cylindrical Shells with Stepped Thickness Variations, 514
- Zhang, L. M.**  
Impact of Routine Quality Assurance on Reliability of Bored Piles, 835  
Termination Criteria for Jacked Pile Construction and Load Transfer in Weathered Soils, 854
- Zhang, Lei**  
Determination of Sustainable Yield in Urban Groundwater Systems: Beijing, China, 1072
- Zhang, Li**  
Form-Finding of Nonregular Tensegrity Systems, 1580
- Zhang, Limin, ed.**  
*see* Parsons, Robert L., ed., 2067
- Zhang, M. Z.**  
*see* Li, C. S., 1610
- Zhang, Q.**  
*see* Ghassemi, A., 437
- Zhang, R.**  
*see* Dawe, J. L., 1511
- Zhang, Shifeng**  
*see* Jia, Shaofeng, 1819
- Zhang, Shu-Juan**  
Impact of Inherent Factors on the Radiolytic Degradation of Biorefractory Contaminants, 755
- Zhang, Tian C.**  
Development of a Response Surface for Prediction of Nitrate Removal in Sulfur—Limestone Autotrophic Denitrification Fixed-Bed Reactors, 721  
Effects of Surface-Bound Fe<sup>2+</sup> on Nitrate Reduction and Transformation of Iron Oxide(s) in Zero-Valent Iron Systems at Near-Neutral pH, 658
- Zhang, Tie**  
*see* Liu, Rong, 60
- Zhang, Weihu**  
EDTA-Enhanced Washing for Remediation of Pb- and/or Zn-Contaminated Soils, 730
- Zhang, Xiao Ming**  
*see* Chen, Su Huan, 520
- Zhang, Xiaofeng**  
Experimental Evaluation of Reduced Beam Section Connections to Deep Columns, 1473  
Seismic Behavior of Reduced Beam Section Moment Connections to Deep Columns, 1474
- Zhang, Xueqing**  
Factor Analysis of Public Clients' Best-Value Objective in Public—Privately Partnered Infrastructure Projects, 383  
Markov-Based Optimization Model for Building Facilities Management, 407  
Public Clients' Best Value Perspectives of Public Private Partnerships in Infrastructure Development, 298
- Zhang, Y. H.**  
*see* Cheng, Y. M., 42
- Zhang, Y. Y.**  
Buckling of Multiwalled Carbon Nanotubes using Timoshenko Beam Theory, 534
- Zhang, Yihua**  
*see* Rakha, Hesham, 1731
- Zhang, Yin**  
Vehicle-Induced Dynamic Performance of FRP versus Concrete Slab Bridge, 144
- Zhang, Yiqiang**  
*see* Yu, Xueyuan, 749
- Zhang, Yue**  
*see* Touzani, Houssam, 1264
- Zhang, Yunfeng**  
Wavelet-Based Vibration Sensor Data Compression Technique for Civil Infrastructure Condition Monitoring, 275
- Zhang, Z.**  
*see* Gil, A. J., 82
- Zhang, Zhanmin**  
Applying Method of Moments to Model Reliability of Pavements Infrastructure, 1706  
*see* Damnjanovic, Ivan, 1671
- Zhao, Can-Hua**  
Experimental Study of Flow in a Vortex Drop Shaft, 937  
Experimental Study of Surcharged Flow at Combining Sewer Junctions, 1058

## AUTHOR INDEX

Zhu

- Zhao, Dianfeng**  
New Approach for Seismic Nonlinear Analysis of Inelastic Framed Structures, 535
- Zhao, Fang**  
*see* Li, Min-Tang, 1735
- Zhao, Fang, P.E.**  
Simulated Annealing - Genetic Algorithm for Transit Network Optimization, 251
- Zhao, H.**  
*see* Forsberg, C. W., 432
- Zhao, J.**  
*see* Zhao, X. B., 498
- Zhao, Jian**  
Comparison of Tests of a Nonlinear Structure using a Shake Table and the EFT Method, 1584
- Zhao, Liangying**  
*see* Toutanji, Houssam, 1264  
*see* Toutanji, Houssam, P.E., 213
- Zhao, Tong**  
Infrastructure Development and Expansion under Uncertainty: A Risk-Preference-Based Lattice Approach, 350
- Zhao, X. B.**  
Normal Transmission of S-Wave across Parallel Fractures with Coulomb Slip Behavior, 498
- Zhao, Xianda**  
*see* Gellner, W. James, II, 773
- Zhao, Yanhua**  
*see* Xu, Shilang, 1357
- Zhao, Zhen Yu**  
*see* Shen, Li Yin, 384
- Zheng, Jinghui**  
Case Study: Design and Operation of Sustainable Urban Infiltration Ponds Treating Storm Runoff, 1775
- Zheng, Weizhong**  
Short-Term Freeway Traffic Flow Prediction: Bayesian Combined Neural Network Approach, 1675
- Zheng, Y. H.**  
Scattering of Linear Water Waves by a Fixed and Infinitely Long Rectangular Structure Parallel to a Vertical Wall in Oblique Seas, 1865
- Zheng, Yong-Hong**  
*see* Wu, Bi-Jun, 1864
- Zhong, Hongzhi**  
Buckling of Simply Supported Rectangular Reissner-Mindlin Plates Subjected to Linearly Varying In-Plane Loading, 491
- Zhong, L.**  
*see* Thornton, E. C., 769
- Zhou, C. E.**  
Closed-Form Stiffness Matrix for the Four-Node Quadrilateral Element with a Fully Populated Material Stiffness, 581
- Zhou, Feng**  
Cold-Formed Stainless Steel Sections Subjected to Web Crippling, 1451  
*see* Inoue, Kazuo, 1525
- Zhou, G. C.**  
Cellular Automata Model for Predicting the Failure Pattern of Laterally Loaded Masonry Wall Panels, 276
- Zhou, Guoqing**  
Customizing Visualization in Three-Dimensional Urban GIS via Web-Based Interaction, 1782
- Zhou, Hongde**  
*see* Quiñones-Bolaños, Edgar, 714
- Zhou, Li-Hua**  
*see* Wang, Kun, 1937
- Zhou, M. C.**  
*see* Wong, Tommy S. W., 1088
- Zhou, Ping**  
Treatment of High-Strength Pharmaceutical Waste-water and Removal of Antibiotics in Anaerobic and Aerobic Biological Treatment Processes, 597
- Zhou, Qin**  
*see* Ye, Mao, 1021
- Zhou, Xiangming**  
Upsetting Tests of Fresh Cementitious Composites for Extrusion, 450
- Zhou, Xiao-Guang**  
*see* Xing, Hao-Feng, 849
- Zhou, Y. Edward**  
Assessment of Bridge Remaining Fatigue Life through Field Strain Measurement, 177
- Zhu, David Z.**  
*see* Zhao, Can-Hua, 937  
*see* Zhao, Can-Hua, 1058
- Zhu, Hehua, ed.**  
Underground Construction and Ground Movement, 2095
- Zhu, Jian-Hang**  
Simultaneous Removal of Phenol and Nitrate in an Anaerobic Bioreactor, 722
- Zhu, Ji-Hua**  
Experimental Investigation of Aluminum Alloy Thin-Walled Tubular Members in Combined Compression and Bending, 1632
- Zhu, Tests and Design of Aluminum Alloy Compression Members, 1546**
- Zhu, Pingsheng**  
*see* Huo, X. Sharon, 1992
- Zhu, Wei**  
Temporal Variation in Consumer Spatial Behavior in Shopping Streets, 1792
- Zhu, X. Q.**  
*see* Bu, J. Q., 579  
*see* Law, S. S., 442
- Zhu, Xueye**  
*see* Pekau, O. A., 537
- Zhu, Yimin**  
Framework to Support the Representations of Semantic Mappings for a Hybrid Integration Strategy, 268

**Zhu, Zhenyu**

Seismic Performance of Concrete-Filled FRP Tube Columns for Bridge Substructure, 139  
Splicing of Precast Concrete-Filled FRP Tubes, 224

**Zhuge, Yan**

*see* Pham, Maria M., 1502

**Ziehl, Paul H., P.E.**

*see* Cole, Thomas A., 145

**Zils, John, P.E.**

*see* Iyengar, Hal, P.E., 2000

**Zimbelman, Darell, P.E., ed.**

Operating Reservoirs in Changing Conditions, 2078

**Zimmer, Alec S., P.E.**

An Avoidable Tragedy, 2039

**Zimmermann, Claus**

*see* Stoschek, Oliver, 1893

**Zipper, Carl E.**

*see* Dougherty, Mark, 643

**Žnidarič, Aleš**

*see* Brady, Sean P., 128

**Zoghi, Manoochehr**

Performance Assessment of a Precast-Concrete, Buried, Small Arch Bridge, 1390

**Zoh, Kyung-Duk**

*see* Kim, Lee-Hyung, 711

**Zoller, U.**

Water Reuse/Recycling and Reclamation in Semiarid Zones: The Israeli Case of Salination and "Hard" Surfactants Pollution of Aquifers<sup>1</sup>, 675

**Zollinger, Dan G., P.E.**

*see* Jeong, Jin-Hoon, 1295

**Zou, Rui**

Integrated Hydrodynamic and Water Quality Modeling System to Support Nutrient Total Maximum Daily Load Development for Wissahickon Creek, Pennsylvania, 644

*see* Wu, Jing, 1838

**Zufelt, Jon E., P.E., ed.**

*see* Davis, Michael, P.E., ed., 2056

**Zulliger, Kimberly**

*see* Xagorarakis, Irene, 692

**Zundel, Alan**

*see* Hereth, William R., 258

**Zureick, Abdul-Hamid**

Statistical Characterization of Fiber-Reinforced Polymer Composite Material Properties for Structural Design, 1569

**Zweifel, Andreas**

Plane Impulse Waves in Reservoirs, 1888

**Zwickly, Dalia**

Critical Inclination of Compression Struts in Concrete Beams, 1508

s

z